STEAMBOAT CHRISTIAN CENTER
HIGHWAY CONSTRUCTION PLANS OF PROPOSED
ACCESS AND LANE IMPROVEMENTS AT M.P. 135.6R

RCRBD
RECORD SET

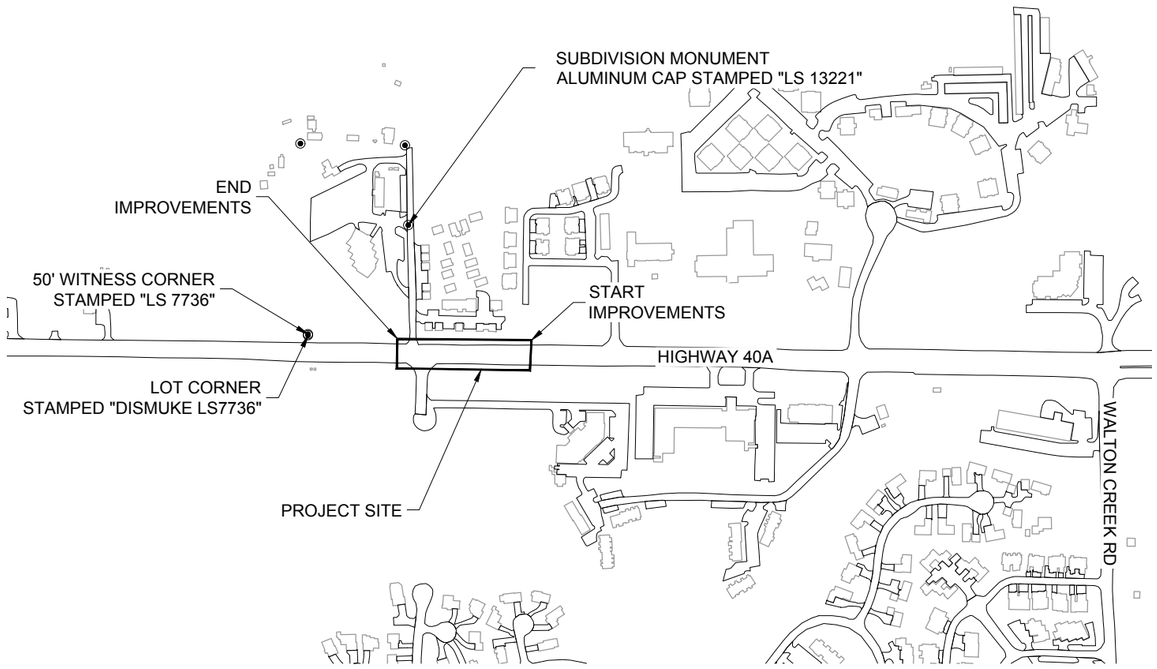
PJ2550-1
Fire Prevention
In: 07/26/2017
Out: 07/29/2017

STATE HIGHWAY 40A
STEAMBOAT SPRINGS, ROUTT COUNTY, COLORADO
CDOT ACCESS PERMIT 315052
LOCATED IN THE SW¼ OF SECTION 28, T6N, R84W, 6 P.M.
CITY OF STEAMBOAT SPRINGS, COUNTY OF ROUTT, STATE OF COLORADO

SHEET NUMBER AND TITLE

COLORADO LICENSED
ERIK J. GRIEPENTROG
33280
PROFESSIONAL ENGINEER

NOT VALID WITHOUT ORIGINAL
SIGNATURE AND DATE



TABULATION OF STATIONING

1. STA 113+30
   START LANE IMPROVEMENTS
2. STA 114+02
   CLOSE-OUT STRIPING
3. STA 113+30
   OVERLAY TIE-IN
4. STA 118+62.5
   CENTERLINE ACCESS INTERSECTION
   STATION/MILE MARKER EQUATION
   118+60.5 = M.P. 136.6R
8. STA 118+28
   CLOSE-OUT STRIPING
9. STA 118+62
   END LANE IMPROVEMENTS
10. STA 118+62
    OVERLAY TIE-IN

DESIGN DATA

1. AVG CENTERLINE GRADE = 0.3%
2. MAX CENTERLINE GRADE = 2.0%
3. DESIGN SPEED NORTH OF ACCESS = 45 MPH
4. DESIGN SPEED SOUTH OF ACCESS = 55 MPH
5. APPROXIMATE PROJECT LENGTH = 460 FEET

Contour Interval = N/A

Horizontal Scale
250 0 250 500
1" = 500'

LANDMARK CONSULTANTS, INC.
141 9th Street, P.O. Box 774943
Steamboat Springs, Colorado 80477
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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

Notice to Proceed	COVER SHEET			Project No./Code
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PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER
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M-203-2		DITCH TYPES	9
M-203-11		SUPERELEVATION CROWNED AND DIVIDED HIGHWAYS (3 SHEETS)	10-12
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M-210-1		MAILBOX SUPPORTS (2 SHEETS)	31-32
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M-216-1	☐	SOIL RETENTION COVERING (2 SHEETS) (NEW ON JULY 16, 2015)	
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M-601-2	☐	DOUBLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON NOVEMBER 25, 2015)	~~42-43~~
M-601-3	☐	TRIPLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON NOVEMBER 25, 2015)	~~44-45~~
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M-606-1	■	GUARDRAIL TYPE 3 W-BEAM (20 SHEETS) (REVISED ON OCTOBER 27, 2014)	~~74-92~~
M-606-1	☐	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES (20 SHEETS) (REVISED ON DECEMBER 29, 2015)	
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COLORADO
DEPARTMENT OF TRANSPORTATION

M&S STANDARDS PLANS LIST

July 04, 2012

Revised on December 29, 2015

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED AND REVISED, APPLY TO THIS PROJECT WHEN USED BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

NEW OR REVISED STANDARD PLAN SHEETS APPLICABLE TO THIS PROJECT, INDICATED BY A MARKED BOX ■, WILL BE ATTACHED TO THE PLANS.

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S-614-5		BREAK-AWAY SIGN SUPPORT DETAILS FOR GROUND SIGNS (2 SHEETS)	165-166
S-614-6	☐	CONCRETE FOOTINGS AND SIGN ISLANDS FOR CLASS III SIGNS (2 SHEETS) (REVISED ON SEPTEMBER 16, 2013)	~~167-168~~
S-614-8	☐	TUBULAR STEEL SIGN SUPPORT DETAILS (6 SHEETS) (REVISED ON OCTOBER 23, 2014)	~~169-173~~
S-614-9		PEDESTRIAN PUSH BUTTON POST ASSEMBLY	174
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RCRBD

RECORD SET

COLORADO LICENSED
ERIK J. GRIEPENTROG
33280
PROFESSIONAL ENGINEER

NOT VALID WITHOUT ORIGINAL SIGNATURE AND DATE

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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

Notice to Proceed	M&S STANDARD PLANS LIST	Project No./Code
No Revisions:		
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	Sheet Subset: Subset Sheet:: of	Sheet Number 2

PROJECT NOTES:

1. PROJECT BENCHMARK: TO BE ESTABLISHED BY THE PROJECT SURVEYOR. COORDINATE WITH LANDMARK CONSULTANTS, INC. 970.871.9494.

2. TOPOGRAPHIC AND EXISTING CONDITIONS MAPPED BY: LANDMARK CONSULTANTS, INC., 141 9TH STREET, STEAMBOAT SPRINGS, CO, 970.871.9494.

3. OFFSITE AND ADJACENT SITE DATA IS FOR REFERENCE PURPOSES ONLY.

4. A GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED UNDER THE TITLE OF "GEOTECHNICAL INVESTIGATION, STEAMBOAT CHRISTIAN CENTER PARKING LOT AND US HIGHWAY 40 IMPROVEMENTS, 821 DOUGHERTY ROAD, STEAMBOAT SPRINGS, COLORADO" BY NWCC DATED FEBRUARY 8, 2013. THESE DRAWINGS DO NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE RECOMMENDATIONS CONTAINED THEREIN. NOTIFY ENGINEER UPON DISCOVERY OF DISCREPANCIES.

5. IT IS THE RESPONSIBILITY OF THE PERMITTEE TO DETERMINE WHICH ENVIRONMENTAL CLEARANCES AND/OR REGULATIONS APPLY TO THE PROJECT, AND TO OBTAIN ANY CLEARANCES THAT ARE REQUIRED DIRECTLY FROM THE APPROPRIATE AGENCY PRIOR TO COMMENCING WORK. PLEASE REFER TO OR REQUEST A COPY OF THE CDOT ENVIRONMENTAL CLEARANCE INFORMATION SUMMARY" (ECIS) FOR DETAILS. THE ECIS MAY BE OBTAINED FROM CDOT PERMITTING OFFICES OR MAY BE ACCESSED VIA THE CDOT PLANNING/CONSTRUCTION-ENVIRONMENTAL GUIDANCE WEBPAGE AT:____
HTTP://WWW.DOT.STATE.CO.US/ACCESSPERMITS/PDF/ENVIRONMENTALCLEARANCESINFORMATIONSUMMARY.PDF

   FAILURE TO COMPLY WITH REGULATORY REQUIREMENTS MAY RESULT IN SUSPENSION OR REVOCATION OF YOUR CDOT PERMIT, OR ENFORCEMENT ACTIONS BY OTHER AGENCIES.

   ALL DISCHARGES ARE SUBJECT TO THE PROVISIONS OF THE COLORADO WATER QUALITY ACT AND THE COLORADO DISCHARGE PERMIT REGULATIONS. PROHIBITED DISCHARGES INCLUDE SUBSTANCES SUCH AS: WASH WATER, PAINT, AUTOMOTIVE FLUIDS, SOLVENTS, OILS, OR SOAPS.

   UNLESS OTHERWISE IDENTIFIED BY CDOT OR THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENTAL (CDPHE) WATER QUALITY CONTROL DIVISION (WQCD) AS SIGNIFICANT SOURCES OF POLLUTANTS TO THE WATERS OF THE STATE, THE FOLLOWING DISCHARGES TO STORMWATER SYSTEMS ARE ALLOWED WITHOUT A COLORADO DISCHARGE PERMIT SYSTEM PERMIT: LANDSCAPE IRRIGATION, DIVERTED STREAM FLOWS, UNCONTAMINATED GROUNDWATER INFILTRATION TO SEPARATE STORM SEWERS, DISCHARGES FROM POTABLE WATER SOURCES, FOUNDATION DRAINS, AIR CONDITION CONDENSATION, IRRIGATION WATER, SPRINGS, FOOTING DRAINS, WATER LINE FLUSHING, FLOWS FROM RIPARIAN HABITATS AND WETLANDS, AND FLOW FROM FIRE FIGHTING ACTIVITIES.

   ANY OTHER DISCHARGES, INCLUDING STORMWATER DISCHARGES FROM INDUSTRIAL FACILITY OR CONSTRUCTION SITES, MAY REQUIRE COLORADO DISCHARGE PERMIT SYSTEM PERMITS FROM CDPHE BEFORE WORK BEGINS. FOR ADDITIONAL INFORMATION AND FORMS, GO TO THE CDPHE WEBSITE AT: HTTP://WWW.CDPHE.STATE.CO.US/WQ/PERMITSUNIT/INDEX.HTML

CONSTRUCTION SURVEYING NOTES:

1. CONSTRUCTION SURVEYING SHALL BE PERFORMED BY A PROFESSIONAL SURVEYOR LICENSED TO PRACTICE IN THE STATE OF COLORADO. THE LICENSED SURVEYOR SHALL BE EXPERIENCED IN CONSTRUCTION LAYOUT.

2. IN THE EVENT OF A CONFLICT BETWEEN THE CADD FILE AND THE CONTRACT DRAWINGS AND SPECIFICATIONS, THE CONTRACT DRAWINGS AND SPECIFICATIONS SHALL GOVERN. THE AVAILABILITY AND USE OF CADD FILES SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR THE PROPER CHECKING AND COORDINATION OF DIMENSIONS, LINES, GRADES AND QUANTITIES OF MATERIALS AS REQUIRED FOR COMPLETE AND ACCURATE COMPLETION OF THE WORK.

3. DO NOT STAKE BUILDINGS, STRUCTURES, ABUTMENTS, RETAINING WALLS, OR ANY PROPOSED DIMENSIONED OR "BY OTHERS" IMPROVEMENT FROM THE CIVIL DRAWINGS OR RELATED CADD FILE. THE PROJECT SURVEYOR IS RESPONSIBLE FOR CALCULATING AND ESTABLISHING THE BUILDING AND GRID LINES IN THE FIELD.

4. CONTOURS ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE NOT SUITABLE FOR CONSTRUCTION LAYOUT.

5. AN AUTOCAD COMPATIBLE FILE WILL BE PROVIDED FOR CONSTRUCTION STAKING PURPOSES, UPON ACCEPTANCE OF LANDMARK'S CAD RELEASE POLICY.

GENERAL NOTES:

1. CONTRACTOR AGREES THAT BY COMMENCING CONSTRUCTION THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING, BUT NOT LIMITED TO THE SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER, THE ENGINEER, AND THE GOVERNING AGENCIES AND THE OFFICERS, DIRECTORS, PARTNERS, EMPLOYEES, AGENTS AND OTHER CONSULTANTS AND SUBCONTRACTORS OF EACH AND ANY OF THEM HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE NEGLIGENCE OF THE OWNER, THE ENGINEER, OR THE GOVERNING AGENCIES. THE CONTRACTOR SHALL DELIVER TO THE OWNER AN ENDORSED INSURANCE CERTIFICATE INDICATING THAT THE APPLICABLE ADDITIONAL INSURED COVERAGE IS IN PLACE PRIOR TO THE COMMENCEMENT OF ANY WORK.

2. THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE CODES, LICENSES, STANDARDS, SPECIFICATIONS, INSURANCE, BONDS, ETC. WHICH ARE NECESSARY TO PERFORM THE PROPOSED WORK.

3. THE CONTRACTOR SHALL MAINTAIN ONE SIGNED COPY OF THE CURRENT AND APPROVED CONSTRUCTION PLANS, SPECIFICATIONS AND GOVERNING AGENCIES REQUIREMENTS AT THE JOB SITE AT ALL TIMES.

4. THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES, (PUBLIC AND PRIVATE) PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. CALL THE UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987, AND ALSO PROCURE ANY PRIVATE UTILITY LOCATES WHICH MAY BE NECESSARY.

5. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERING ANY CONFLICTS OR OTHER PROBLEMS IN CONFORMING TO THE APPROVED CONSTRUCTION DRAWINGS, SPECIFICATIONS OR DETAILS FOR ANY ELEMENT OF THE PROPOSED IMPROVEMENTS PRIOR TO PROCEEDING WITH ITS CONSTRUCTION.

6. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE OWNER, ENGINEER, SURVEYOR, TESTING COMPANY, CDOT AND KEY SUBCONTRACTORS A MINIMUM OF 48 HOURS PRIOR TO THE START OF THE WORK. CONTACT DEVIN DRAYTON WITH CDOT AT 970.683.6286 TO SCHEDULE MEETING.

7. THE CONTRACTOR SHALL PROVIDE THE OWNER, ENGINEER, THEIR CONSULTANTS, INDEPENDENT TESTING LABORATORIES, ANY GOVERNMENTAL AGENCIES WITH JURISDICTIONAL INTERESTS, OTHER REPRESENTATIVES AND PERSONNEL, ACCESS TO THE SITE AND THE WORK AT REASONABLE TIMES FOR THEIR OBSERVATION, INSPECTING, AND TESTING. THE CONTRACTOR SHALL PROVIDE THEM PROPER AND SAFE CONDITIONS FOR SUCH ACCESS AND ADVISE THEM OF THE CONTRACTOR'S SITE SAFETY PROCEDURES AND PROGRAMS SO THAT THEY MAY COMPLY THEREWITH AS IS APPLICABLE.

8. THE CONTRACTOR SHALL LIMIT HIS OPERATIONS TO THE PROJECT SITE, EXCEPT AS NOTED OR SHOWN HERE IN.

9. THE CONTRACTOR SHALL PROVIDE A WRITTEN COPY OF ANY AGREEMENT OR PERMIT TO USE OFFSITE PROPERTY TO THE OWNER PRIOR TO ANY USE. THE CONTRACTOR SHALL NOT OBLIGATE THE OWNER TO ANY STIPULATIONS UNLESS THE OWNER BECOMES A PARTY TO THE AGREEMENT.

10. HAZARDOUS MATERIALS SHALL BE REMOVED BY OWNER UNDER A SEPARATE CONTRACT. IF ADDITIONAL HAZARDOUS MATERIAL OR SUSPECT MATERIAL IS ENCOUNTERED THE CONTRACTOR SHALL NOTIFY OWNER BEFORE CONTINUING WORK.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION. THE CONTRACTOR SHALL COMPLY WITH LOCAL, STATE AND FEDERAL LAWS AND PERMITS FOR THE CONTROL OF EROSION AND SEDIMENT AND FUGITIVE DUST. THE CONSTRUCTION MANAGEMENT PLAN AND REQUIRED DOCUMENTATION SHALL BE KEPT ON SITE AND BE AVAILABLE TO THE GOVERNING AGENCY AT ANY TIME.

12. LANDMARK CONSULTANTS, INC IS NOT RESPONSIBLE FOR INFORMATION PROVIDED BY OTHERS.

UTILITY CONTACTS:

1.	SEWER & WATER	RICHARD BUCCINO (MT WERNER WATER)	970-879-2424
2.	GAS	DON CRANE (ATMOS)	970-879-3223
3.	ELECTRIC	LARRY BALL (YVEA)	970-871-2282
4.	CDOT CONTACT	DEVIN DRAYTON/THOMAS KOZOJED	970-683-6221

R C R B D

RECORD SET

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ERIK J. GRIEPENTROG
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Void:	Detailer: MG				Sheet Number 3
	Sheet Subset:		Subset Sheet::	of	

RIGHT-OF-WAY AND PAVING NOTES:

1. ALL WORK IN THE HIGHWAY 40 RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CDOT. FURTHER, ALL MATERIALS, EQUIPMENT, INSTALLATION AND CONSTRUCTION WITHIN THE STATE HIGHWAY RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING STANDARD REFERENCES AS APPLICABLE:
   - 1.1. CDOT FIELD MATERIALS MANUAL.
   - 1.2. CDOT CONSTRUCTION MANUAL.
   - 1.3. CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
   - 1.4. CDOT STANDARD PLANS (M&S STANDARDS).
   - 1.5. CDOT SURVEY AND RIGHT-OF-WAY MANUAL.
   - 1.6. FHWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS FROM THE COLORADO SUPPLEMENT.
   - 1.7. AASHTO ROADSIDE DESIGN GUIDE.

   PLEASE NOTE THAT SOME THE REFERENC MATERIALS LISTED ABOVE MAYBE PURCHASED FROM:
   COLORADO DEPARTMENT OF TRANSPORTATION
   BID PLANS ROOM
   4201 EAST ARKANSAS AVENUE
   DENVER, CO 80222-3400
   (303) 757-9313

2. ALL CONSTRUCTION WITHIN THE HIGHWAY RIGHT-OF-WAY AND ALL HIGHWAY IMPROVEMENTS SHALL COMPLY WITH THE ACCESS PERMIT AND NOTICE TO PROCEED (NTP). A COPY OF THAT PERMIT AND NTP SHALL BE AVAILABLE ON THE CONSTRUCTION SITE AT ALL TIMES.
3. THE CONTRACTOR SHALL PROVIDE ALL SIGNS, BARRICADES, FLAG MEN, LIGHTS OR OTHER DEVICES NECESSARY FOR SAFE TRAFFIC CONTROL IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND AS MODIFIED BY THE COLORADO SUPPLEMENT TO THE MUTCD.
4. CONTRACTOR SHALL DESIGNATE A CERTIFIED TCS TO MANAGE CONSTRUCTION SIGNAGE AND SAFETY OPERATIONS DURING ACTIVITIES WITH THE HIGHWAY RIGHT-OF-WAY. THE TCS SHALL BE ON-SITE WHILE WORK IN THE RIGHT-OF-WAY IS IN PROGRESS.
5. DURING CONSTRUCTION ONLY VEHICLES SPECIFICALLY BEING USED FOR CONSTRUCTION ARE PERMITTED TO PARK IN THE HIGHWAY RIGHT-OF-WAY. THE CONTRACTOR SHALL PROVIDE AN EMPLOYEE PARKING LOCATION OUTSIDE OF THE RIGHT-OF-WAY.
6. THE CONTRACTOR SHALL COMPLETE COMPLETE ALL WORK IN THE HIGHWAY RIGHT-OF-WAY WITHIN 45-DAYS AND WITHIN A SINGLE CONSTRUCTION SEASON.
7. ACCESS TO ALL ADJACENT PROPERTIES AND FACILITIES SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS MAYBE COORDINATED IN ADVANCE WITH AFFECTED PROPERTIES.
8. THE CONTRACTOR SHALL SAW CUT THE EDGE OF THE EXISTING ASPHALT MAT TO PROVIDE A CLEAN JOINT BETWEEN THE EXISTING ROADWAY SURFACE AND THE PROPOSED HIGHWAY WIDENING.
9. THE HOT MIX ASPHALT DESIGN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO PAVING.
10. CONTRACTOR SHALL STAGGER LONGITUDINAL JOINTS BY AT LEAST 1-FT ON SUCCESSIVE HOT ASPHALT PAVEMENT LIFTS. CONTRACTOR SHALL PROVED A JOINT LAYOUT PLAN FOR THE ENGINEER'S REVIEW PRIOR TO PLACING HOT MIX ASPHALT.
11. CONTRACTOR SHALL REMOVE EXISTING PAVEMENT MARKINGS NOT OVERLAID BY NEW PAVEMENT BY GRINDING OR BLASTING TO THE MINIMUM DEPTH NECESSARY TO COMPLETELY REMOVE THEM.
12. CONTRACTOR SHALL INSTALL THEMOPLASTIC PAVEMENT MARKINGS FOR ALL SYMBOLS LOCATED ON PAVEMENT.
13. THE CONTRACTOR SHALL PROVIDE ON-SITE SANITARY FACILITIES UNLESS FACILITIES ARE ALREADY PROVIDED THAT ARE REASONABLY CLOSE TO THE CONSTRUCTION SITE.
14. THERE IS A POTENTIAL FOR ENCOUNTERING PETROLEUM CONTAMINATED MATERIALS ON THE PROJECT. IF ENCOUNTERED, THE CONTRACTOR SHALL FOLLOW SECTION 250 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

GRADING AND EROSION CONTROL NOTES:

1. CONTRACTOR SHALL COMPLY WITH LOCAL, STATE, AND FEDERAL LAWS AND PERMITS FOR THE CONTROL OF EROSION, SEDIMENT AND MANAGING STORM WATER, INCLUDING OBTAINING A STORMWATER CONSTRUCTION DISCHARGE PERMIT.
2. ALL AREAS DISTURBED DURING CONSTRUCTION AND NOT PAVED AT THE COMPLETION OF CONSTRUCTION SHALL BE APPROPRIATELY RE-VEGETATED.
3. ANY CONSTRUCTION DEBRIS OR MUD TRACKING IN THE PUBLIC RIGHT-OF-WAY RESULTING FROM THE CONSTRUCTION ACTIVITIES SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
4. CONTRACTOR SHALL INSTALL STRAW AND COCONUT SOIL RETENTION BLANKET ON ALL SLOPES STEEPER THAN 3H:1V PER SECTION SECTION 216 OF THE COLORADO DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
5. THE CONTRACTOR SHALL APPLY WATER AND/OR WATER WITH ADDITIVES ON ALL ACCESS AND HAUL ROADS, EXCAVATIONS, SURFACES OR FILLED TRENCHES, STOCKPILES, WASTE AREAS, AND OTHER WORK AREAS AS MAY BE NECESSARY TO ADEQUATELY CONTROL DUST.
6. CONTRACTOR SHALL STRIP AND STOCKPILE THE TOPSOIL FOR USE DURING RE-VEGETATION OF THE SITE. PRIOR TO PLACING TOPSOIL, THE SUBSOIL SHOULD BE RIPPED IF COMPACTED. TOPSOIL SHOULD BE SPREAD EVENLY TO A MINIMUM DEPTH OF 6-INCHES, THE SITE TILLED AND FIRMED TO PREPARE A SUITABLE SEED BED.
7. ALL DISTURBED AREAS SHALL BE RE-SEEDED ACCORDANCE WITH SECTION 212 OF THE COLORADO DEPARTMENT OF TRANSPIRATION SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. CONTRACTOR SHALL USE THE FOLLOWING SEED MIXTURE:

   SEED MIX:

NAME	POUNDS PURE LIVE SEED PER ACRE
BLUEJOINT REEDGRASS	3.0
MOUNTAIN BROME	9.0
SLENDER WHEATGRASS	6.0
SHEEP FESCUE	2.0
WESTERN WHEATGRASS	8.0
VNS, SAND DROPSEED	1.0
TOTAL POUNDS PLS/ACRE	29.0

8. PROPER WEED CONTROL MEASURE SHALL BE REQUIRED THE FIRST YEAR TO ENSURE THE ESTABLISHMENT OF A SUFFICIENT STAND OF GRASS AND TO PREVENT THE INVASION OF WEEDS. HERBICIDES MAY BE NECESSARY DURING THE FIRST GROWING SEASON.
9. CLEARING AND GRUBBING SHALL INCLUDE REMOVAL OF ALL TREES, LOGS, LIMBS, STUMPS, BRUSH, AND TRASH AND ECT. TO AN OFFSITE LOCATION.
10. COMPACTION FOR ALL REQUIRED EARTHWORK SHALL COMPLY TO THE COLORADO DEPARTMENT OF TRANSPORTATION SPECIFICATION STANDARD REVISION OF SECTIONS 203, 206, 304 AND 613 - COMPACTION.

CONTINGENCY PLAN:

1. PRIOR TO CONSTRUCTION ACTIVITIES, CONTRACTOR IS REQUIRED TO PROOFROLL WITHIN FOUR FEET OF EXISTING RETAINING WALL TO ENSURE STRUCTURAL INTEGRITY.
2. IN THE EVENT THAT THE WALL FAILS (BULGING, CRACKING, SEPERATING, EXCESSIVE SETTLING, LEANING, ETC...) CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH NWCC TO ADEQUATELY STRENGTHEN AND RETURN THE WALL TO ITS PRE-CONSTRUCTION CONDITION.
3. IF REPAIRS TO THE WALL WILL LIKELY IMPACT THE WETLANDS, CONTRACTOR IS TO COORDINATE A 404 PERMIT APPLICATION WITH THE PROJECT OWNER.

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RECORD SET

COLORADO LICENSED
ERIK J. GRIEPENTROG
33280
PROFESSIONAL ENGINEER

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BOUNDARY LEGEND

PROPERTY BOUNDARY

PROFILE LAYERS

EXISTING PROFILE GRADE

PROPOSED PROFILE GRADE

PROFILE ELEVATION BAND

PROFILE GRID

ALL PROFILE TEXT

DRAINAGE LEGEND

EXISTING DITCH / SWALE

PROPOSED CULVERT

EXISTING CULVERT

EXISTING WETLANDS

STORMWATER MANAGEMENT LEGEND

xx xx

PROPOSED SILT FENCE

PROPOSED SOIL RETENTION BLANKET

PROPOSED GENERAL LEGEND

PROPOSED EDGE OF GRAVEL

6800

PROPOSED 10-FT CONTOUR

PROPOSED 2-FT CONTOUR

PROPOSED GUARDRAIL

PROPOSED ASPHALT PAVEMENT

PROPOSED CONCRETE

PROPOSED MILL AND OVERLAY EX ASPHALT

x ####.##

PROPOSED SPOT ELEVATION

EXISTING GENERAL LEGEND

EXISTING BUILDING

x x x

EXISTING FENCE

EXISTING EDGE OF GRAVEL

EXISTING EDGE OF ASPHALT

6800

EXISTING 10-FT CONTOUR

EXISTING 2-FT CONTOUR

EXISTING ASPHALT

EXISTING CONCRETE

x (####.##)

EXISTING SPOT ELEVATION

EXISTING UTILITY LEGEND

XS XS XS

EXISTING UNDERGROUND SANITARY SEWER LINE

S C

EXISTING SANITARY SEWER MANHOLE AND CLEANOUT

XW XW XW

EXISTING UNDERGROUND WATER LINE

W

EXISTING WATER MANHOLE AND CURB STOP

EXISTING GATE VALVE AND FIRE HYDRANT

XG XG XG

EXISTING UNDERGROUND GAS LINE

XOH XOH XOH

EXISTING OVERHEAD UTILITY LINES

EXISTING UTILITY POLE WITH GUY WIRE

XE XE XE

EXISTING UNDERGROUND ELECTRIC LINE

XE

EXISTING ELECTRIC TRANSFORMER AND SECONDARY PEDESTAL

EXISTING LIGHT POLE AND LIGHT POLE WITH MAST

TV

EXISTING CABLE TELEVISION PEDESTAL

XT XT XT

EXISTING UNDERGROUND TELEPHONE LINE

T T

EXISTING TELEPHONE PEDESTAL AND TELEPHONE MANHOLE

XFO XFO XFO

EXISTING FIBER OPTIC CABLE

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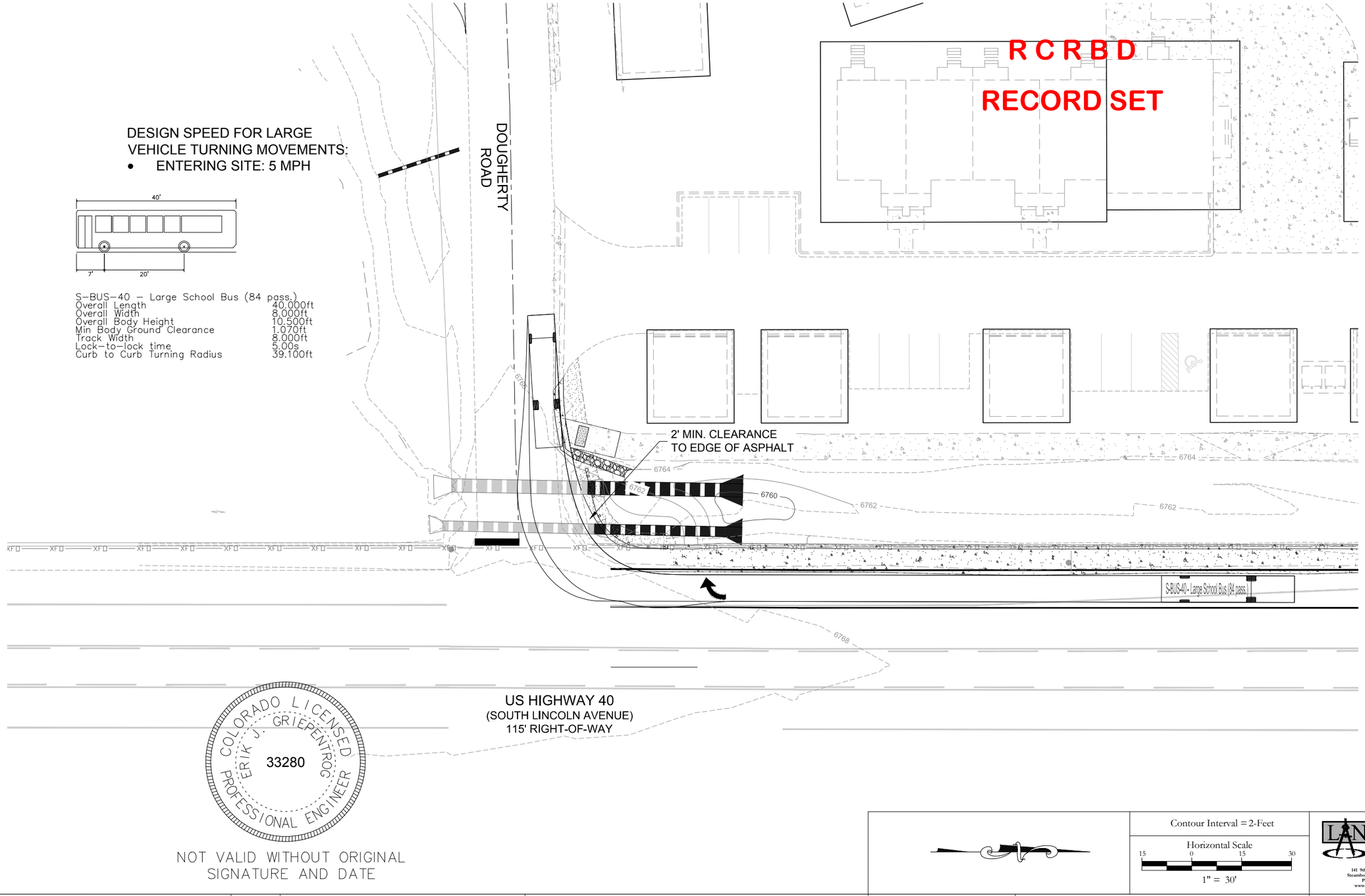
DESIGN SPEED FOR LARGE VEHICLE TURNING MOVEMENTS:

- ENTERING SITE: 5 MPH

S-BUS-40 - Large School Bus (84 pass.)

Overall Length	40.000ft
Overall Width	8.000ft
Overall Body Height	10.500ft
Min Body Ground Clearance	1.070ft
Track Width	8.000ft
Lock-to-lock time	5.00s
Curb to Curb Turning Radius	39.100ft



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Contour Interval = 2-Feet

Horizontal Scale
15 0 15 30
1" = 30'

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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

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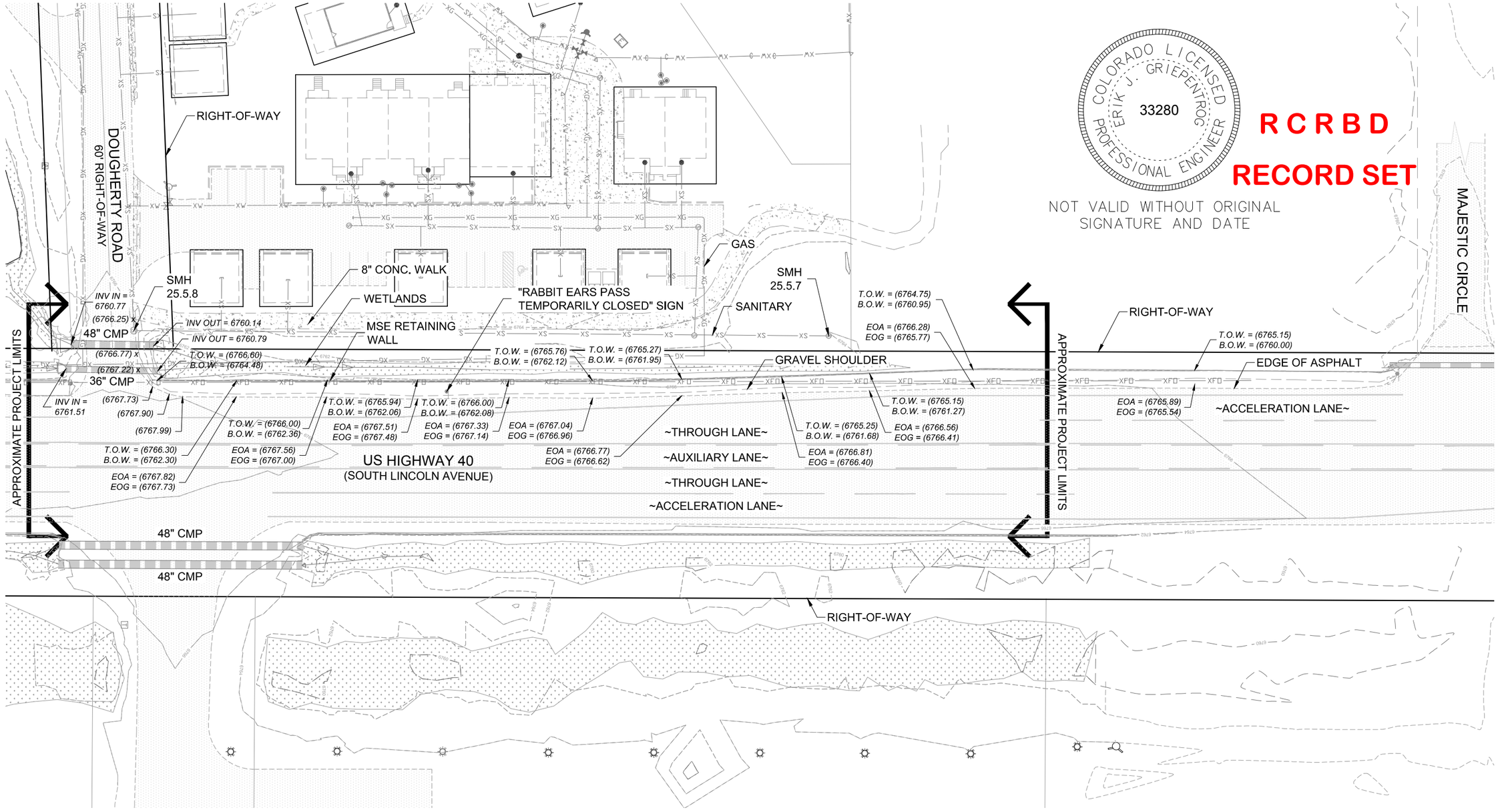

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Horizontal Scale
25 0 25 50
1" = 50'

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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

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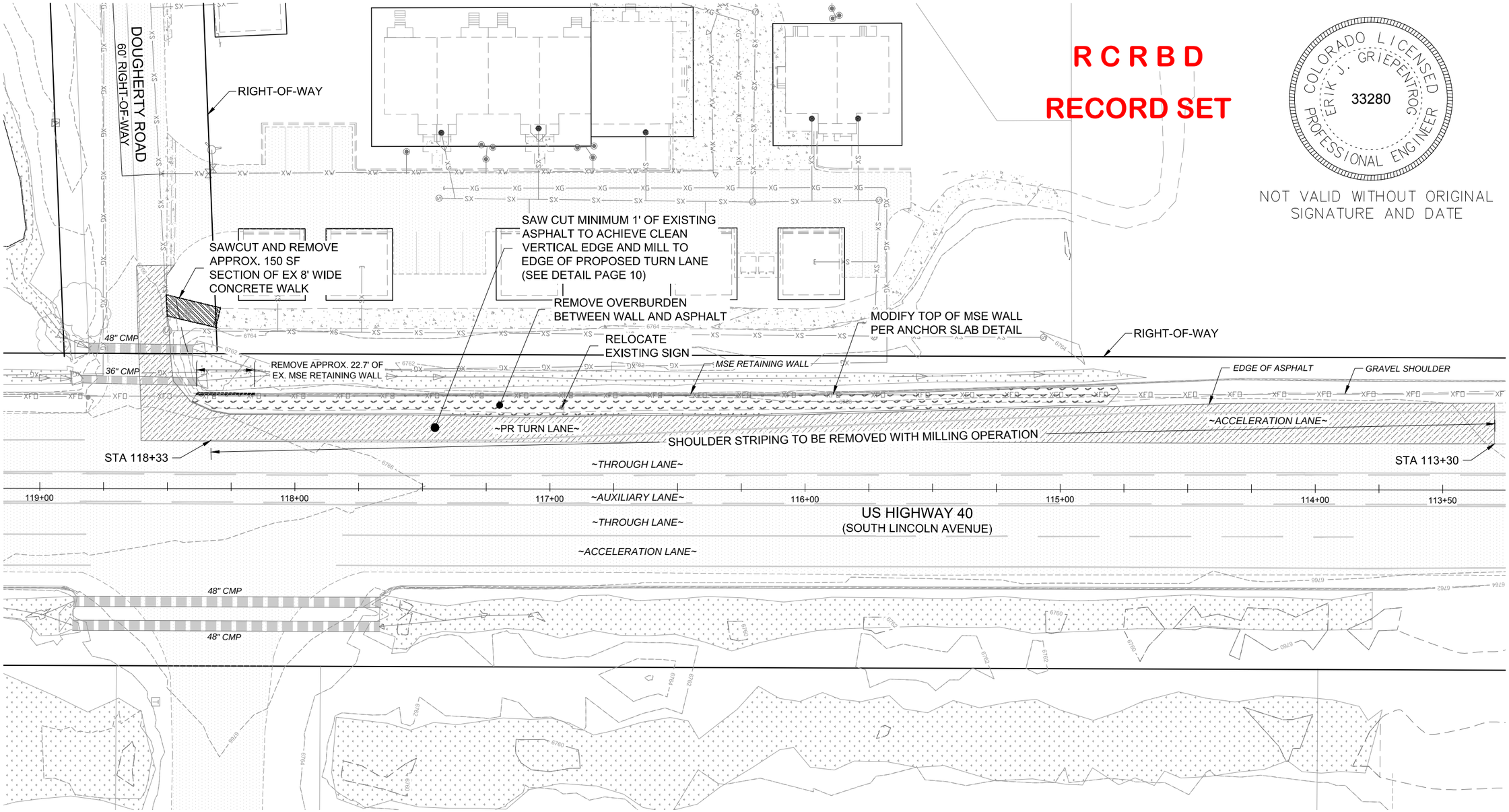

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Horizontal Scale
20 0 20 40
1" = 40'

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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

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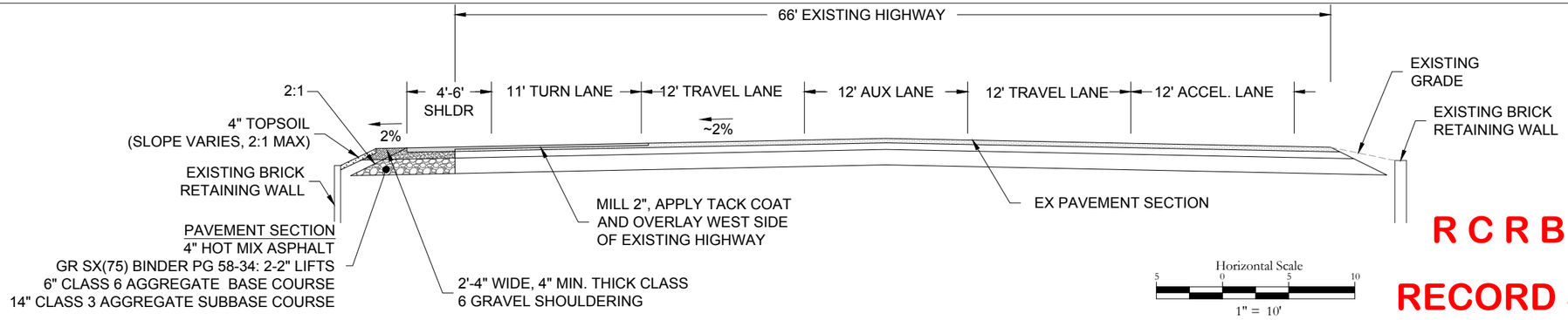

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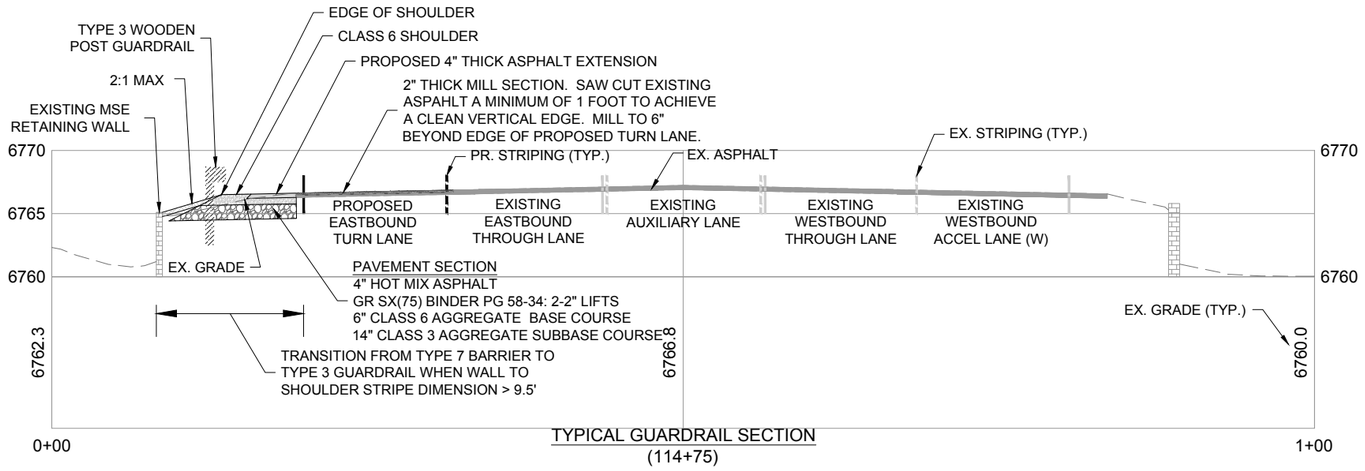
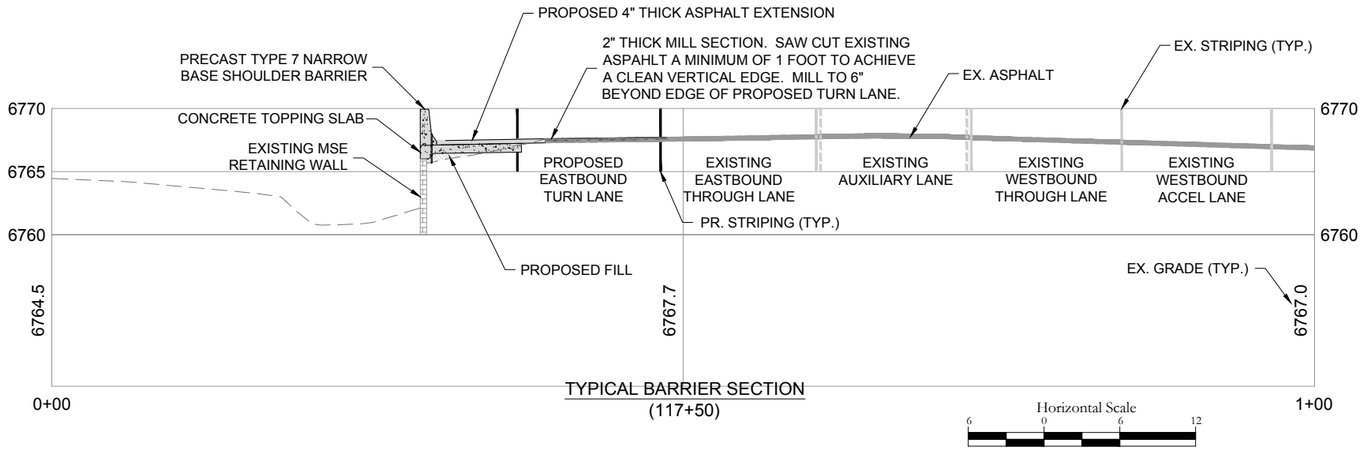


TYPICAL GUARDRAIL SECTION
(114+75)



TYPICAL BARRIER SECTION
(117+50)

Horizontal Scale
6 0 6 12
1" = 12'

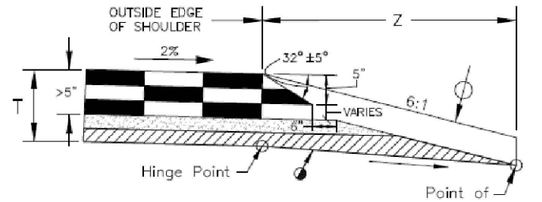
TYPICAL SECTION NOTES:

1. CDOT MUST APPROVE THE ASPHALT MIX DESIGN PRIOR TO CONSTRUCTION. THE PERMITTEE'S ENGINEER OF RECORD SHALL COORDINATE WITH THE CDOT PERMIT UNIT CONTACT PERSON (970-683-6286) TO OBTAIN APPROVAL.

2. THE LONGITUDINAL PAVEMENT SEAM CREATED BETWEEN THE EXISTING ASPHALT AND THE NEW ASPHALT SHALL NOT BE LOCATED IN THE WHEEL PATH.

3. AT THE LOCATIONS WHERE NEW ASPHALT IS TO ABUT EXISTING ASPHALT, SAW CUT THE EXISTING PAVEMENT 1 FOOT BACK FROM THE EXISTING EDGE AND REMOVE PAVEMENT. FROM THE SAW CUT LINE, MILL EXISTING PAVEMENT BACK 1 FOOT TO A DEPTH OF 2 INCHES. TACK EXPOSED VERTICAL ASPHALT EDGE PRIOR TO PAVING. THE SAW CUTTING WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE REMOVAL OF THE ASPHALT ITEM.

PAVEMENT SAFETY EDGE DETAIL



PAVEMENT THICKNESS GREATER THAN 5"

Horizontal Scale
15 0 15 30
1" = 30'

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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

Notice to Proceed	TYPICAL SECTIONS	Project No./Code
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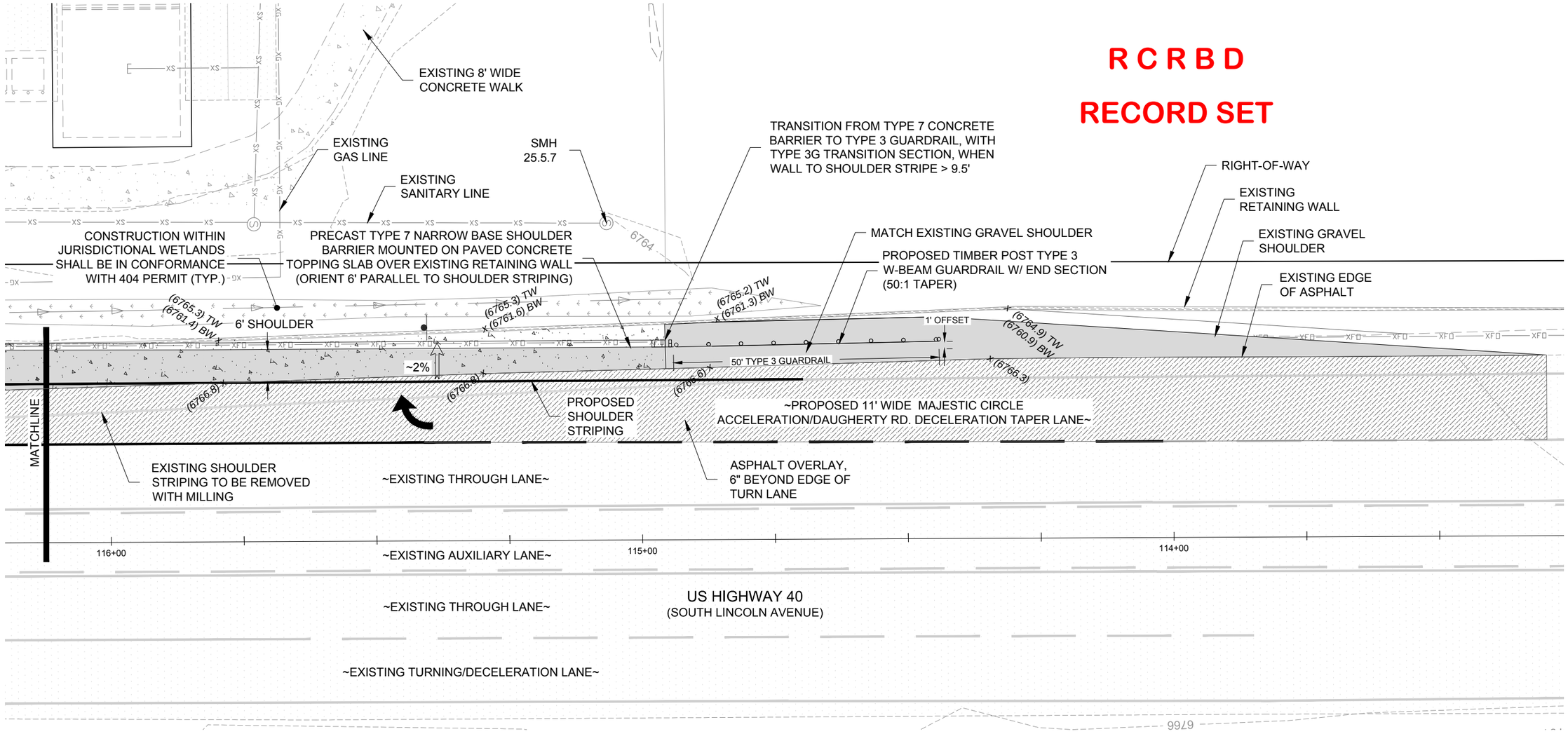

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Contour Interval = 2-Feet

Horizontal Scale
10 0 10 20
1" = 20'

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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

Notice to Proceed	ROADWAY PLAN STA 113+75 TO STA 116+25	Project No./Code
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RCRBD

RECORD SET

DOUGHERTY ROAD

RIGHT-OF-WAY

6' ABC CLASS 6 GRAVEL SHOULDER

REPLACE SECTION OF 8' WIDE CONC. WALK

R=222.5'

ADA DETECTABLE WARNING PAD

3' WIDE CONCRETE VALLEY PAN

PROVIDE MIN. 24" CLEARANCE BETWEEN GUARDRAIL END SECTION AND SIDEWALK

RIP RAP LINED CHANNEL

SMH 25.5.8

EX INV IN = 6760.93

EX INV OUT = 6760.14

EXTEND EX 48" CMP

PR INV OUT = 6759.23

R=50.0'

2:1 MAX

48" CMP

EX INV IN = 6761.68

R=17.0'

R=19.6'

2:1 MAX

PR INV OUT = 6760.08

36" CMP

EXISTING STOP SIGN (TO REMAIN)

EX INV OUT = 6760.79

REMOVE APPROX. 22.7' OF MSE WALL

RELOCATED SIGN FROM STATION 116+95

EXTEND 36" CMP

PROPOSED SHOULDER STRIPING

CONSTRUCTION WITHIN JURISDICTIONAL WETLANDS SHALL BE IN CONFORMANCE WITH 404 PERMIT (TYP.)

EXISTING 8' WIDE CONCRETE WALK

EXISTING SANITARY LINE

PRECAST TYPE 7 NARROW BASE SHOULDER BARRIER MOUNTED ON CONCRETE TOPPING SLAB OVER EXISTING RETAINING WALL

RIGHT-OF-WAY

FLOWLINE

8' SHOULDER

~2%

(6766.3) TW
(6762.3) BW

(6766.0) TW
(6762.5) BW

(6765.9) TW
(6762.1) BW

(6766.0) TW
(6762.1) BW

(6765.8) TW
(6762.0) BW

(6768.0)

(6767.8)

(6767.6)

(6767.5)

(6767.3)

(6767.0)

~EXISTING SHOULDER/11' WIDE PROPOSED TURN LANE~

MATCHLINE

PROPOSED TYPE 3 WOODEN POST W-BEAM GUARDRAIL WITH TYPE 3G BARRIER TRANSITION TRANSITION, TYPE 3J CURVE SECTION AND TYPE 3K LOW SPEED TERMINAL END SECTION
*COORDINATE POST LAYOUT W/ CULVERTS AND SANITARY SEWER. CONFIRM LAYOUT W/ ENGINEER PRIOR TO INSTALLATION

ASPHALT OVERLAY, 6" BEYOND EDGE OF TURN LANE

TRANSITION FROM TYPE 7 CONCRETE BARRIER TO TYPE 3 GUARDRAIL, WITH TYPE 3G TRANSITION SECTION

~EXISTING THROUGH LANE~

EXISTING SIGN (RELOCATE TO APPROX. STA 119+00)

EXISTING SHOULDER STRIPING TO BE REMOVED

119+00

118+00

117+00

~EXISTING AUXILIARY LANE~

US HIGHWAY 40
(SOUTH LINCOLN AVENUE)

~EXISTING THROUGH LANE~

~EXISTING ACCELERATION LANE~

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Contour Interval = 2-Feet

Horizontal Scale
10 0 10 20
1" = 20'

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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

Notice to Proceed	ROADWAY PLAN STA 116+25 TO STA 119+00			Project No./Code
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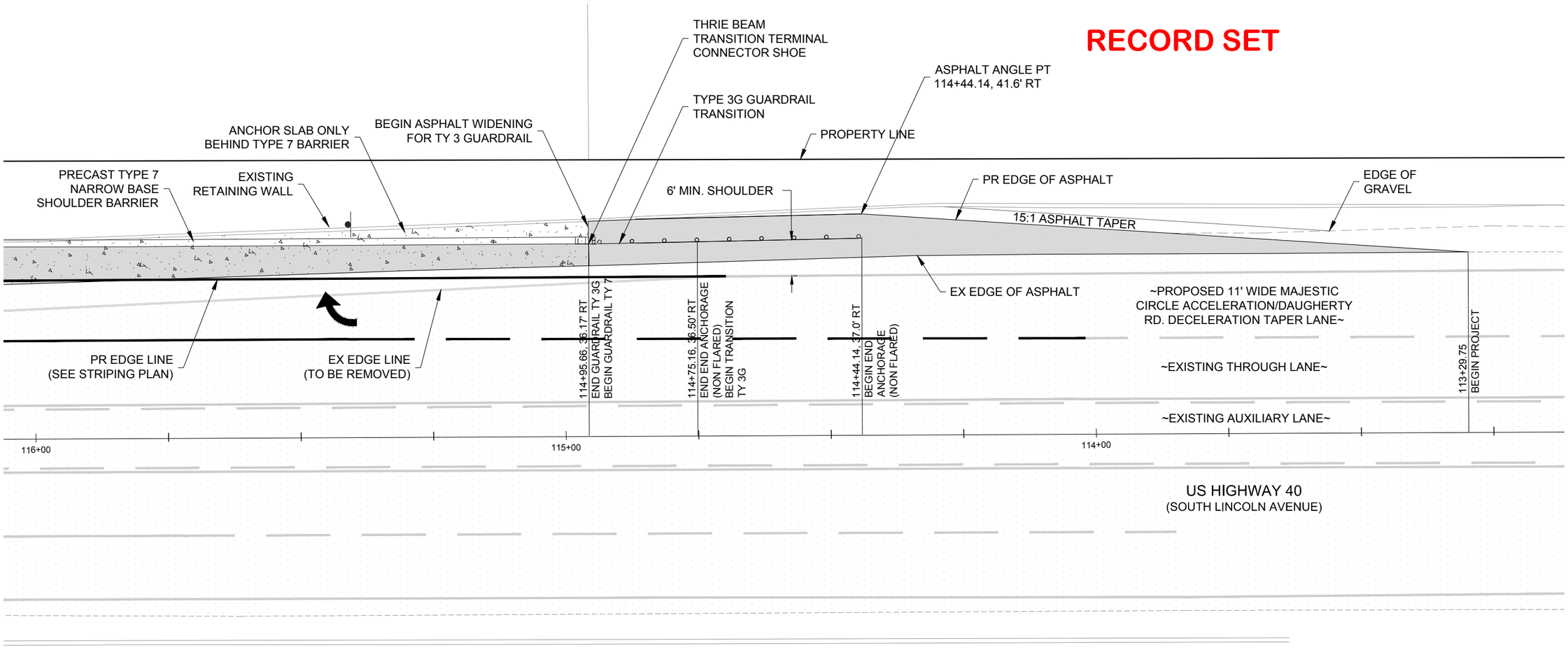

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SIGNATURE AND DATE

Contour Interval = N/A

Horizontal Scale
10 0 10 20
1" = 20'

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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

Notice to Proceed	NORTH GUARDRAIL TRANSITION DETAIL			Project No./Code
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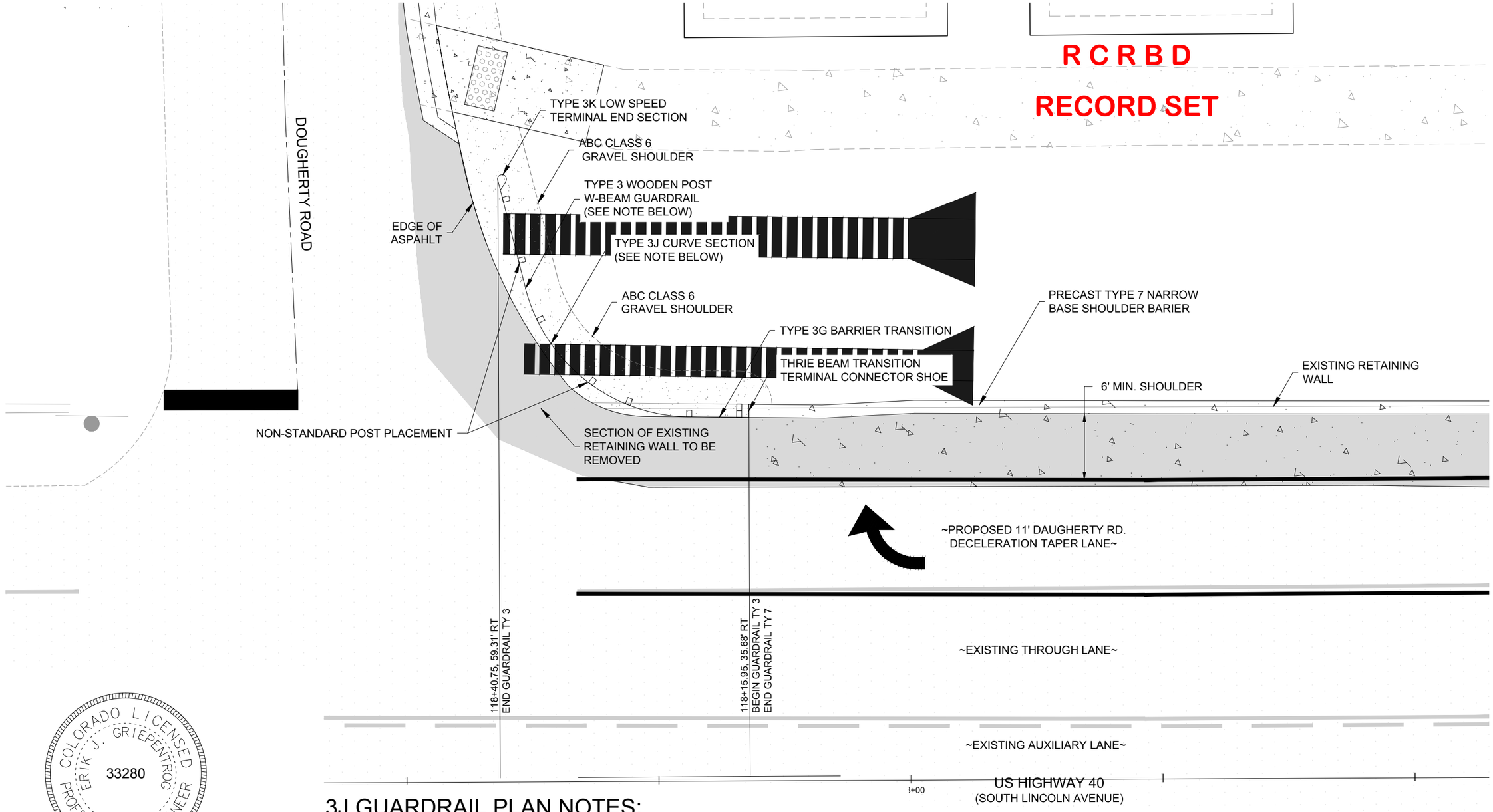

COLORADO LICENSED
ERIK J. GRIEPENTROG
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PROFESSIONAL ENGINEER

NOT VALID WITHOUT ORIGINAL SIGNATURE AND DATE

3J GUARDRAIL PLAN NOTES:

1. FIELD FIT GUARDRAIL POSTS TO AVOID EXISTING CULVERTS, TO INCLUDE PLACEMENT AND DRILLING HOLES IN W-BEAM GUARDRAIL.
2. NUMBER OF POSTS AND SPACING SHALL BE AS CLOSE TO STANDARD AS CULVERT LAYOUT WILL ALLOW. THE ENGINEER SHALL BE NOTIFIED OF ALL PROPOSED MODIFICATIONS PRIOR TO PLACEMENT.

Contour Interval = 2-Feet

Horizontal Scale

5 0 5 10

1" = 10'

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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

Notice to Proceed	SOUTH GUARDRAIL TRANSITION DETAIL			Project No./Code
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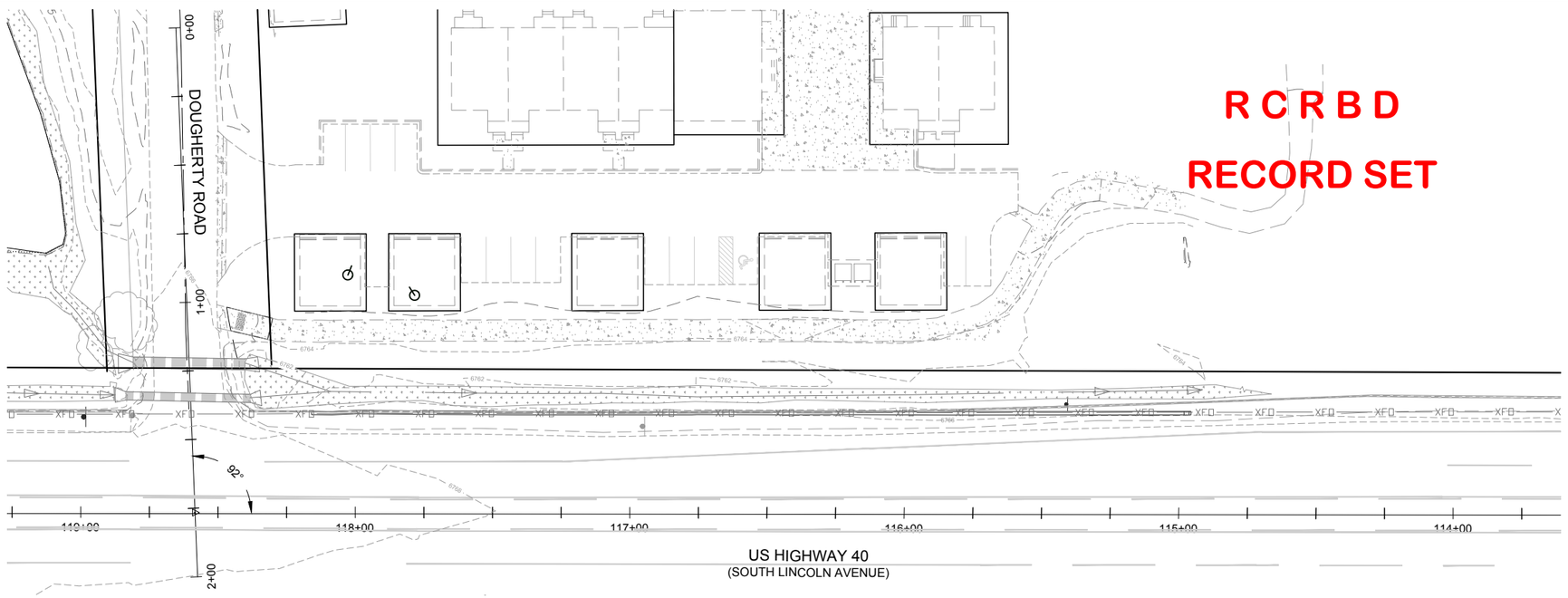

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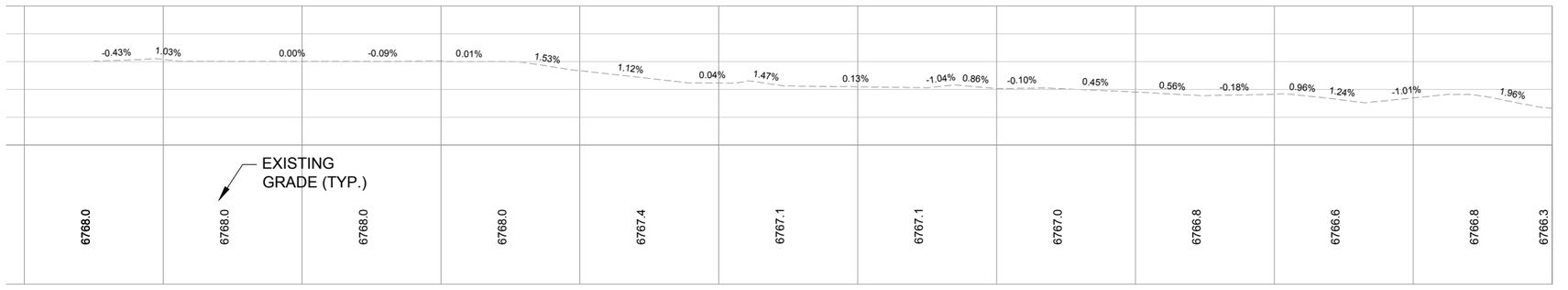
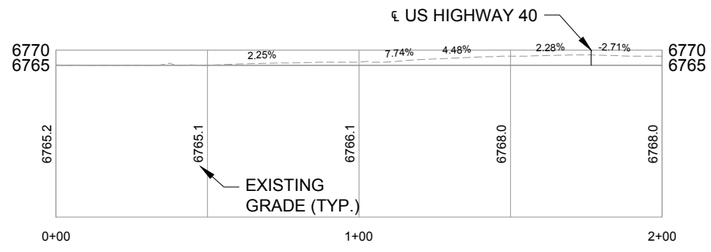


HIGHWAY 40
EXISTING CENTERLINE PROFILE



DAUGHERTY ROAD
EXISTING CENTERLINE PROFILE

COLORADO LICENSED
ERIK J. GRIEPENTROG
33280
PROFESSIONAL ENGINEER

NOT VALID WITHOUT ORIGINAL SIGNATURE AND DATE

Horizontal Scale
25 0 25 50
1" = 50'

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Creation Date: 06/02/2015	Initials: MG		
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Full Path:			
Drawing File Name: 1570-004-HW-PROFILE.DWG			
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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

Notice to Proceed	HIGHWAY 40 & DAUGHERTY LANE CENTERLINE PROFILES	Project No./Code
No Revisions:		
Revised:	Designer: MG	
Void:	Detailer: MG	Sheet Number 15
	Sheet Subset:	Subset Sheet:: of

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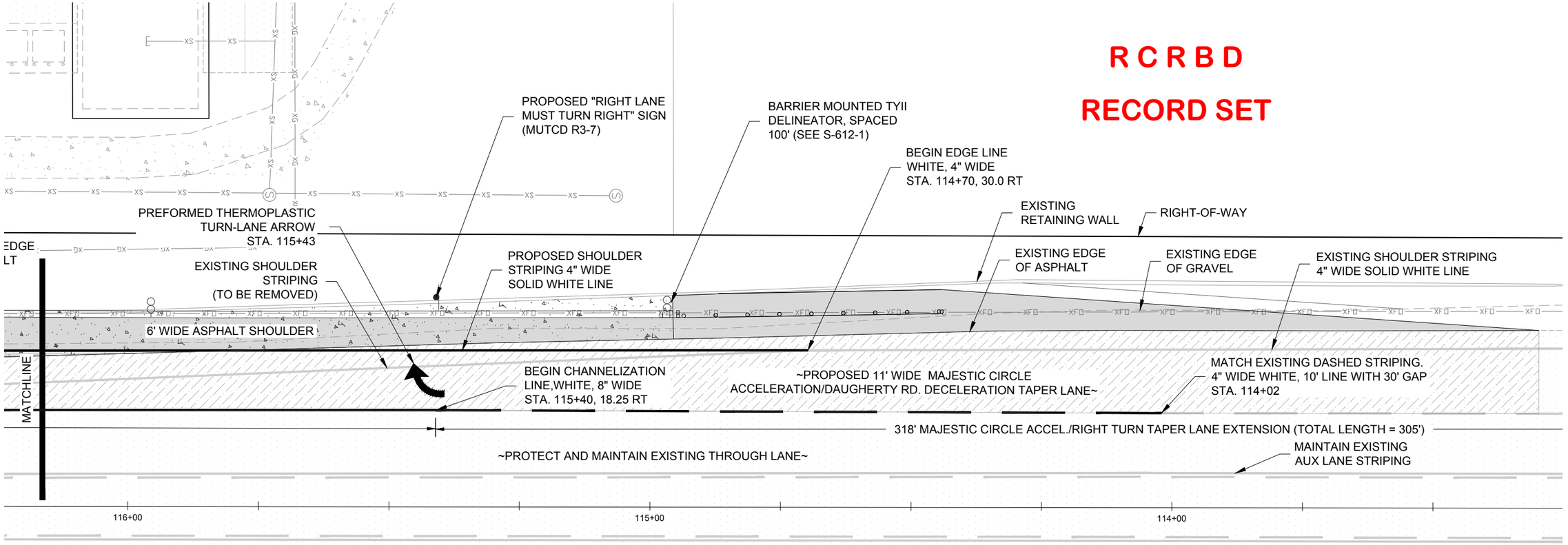

SIGNING & MARKING PLAN NOTES:

1. IN CDOT REGION 3 ALL SIGN POSTS SHALL BE GALVANIZED TUBULAR STEEL.
2. FULL-COMPLIANCE, TEMPORARY PAVEMENT MARKINGS SHALL BE APPLIED PER CDOT SPECIFICATIONS AT THE END OF EACH CONSTRUCTION DAY.
3. THE CONTRACTOR SHALL CONTACT CDOT PROJECT MANAGER AND ENGINEER OF RECORD, AT LEAST TWO WEEKS PRIOR TO SCHEDULE STRIPING. THE PERMITTEE WILL BE RESPONSIBLE FOR ANY CORRECTIONS REQUIRED UPON FINAL INSPECTION OF THE ACCESS.
4. STRIPING SHALL BE EPOXY PAINT AS PER SECTION 627 OF THE CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
5. UNLESS AN ASPHALT OVERLAY IS REQUIRED, GRINDING OF EXISTING PAVEMENT MARKINGS SHALL BE REQUIRED BY CDOT. THE PAVEMENT MARKINGS SHALL BE REMOVED TO THE EXTENT THAT THEY WILL NOT BE VISIBLE UNDER DAY OR NIGHT CONDITIONS AND IN A MANNER THAT WILL NOT AFFECT TRAFFIC FLOW.
6. ALL STENCILS SHALL BE INLAYED.
7. TYPE II DELINEATORS (DOUBLE CRYSTAL) SHALL BE INSTALLED AT 100 FT SPACING ADJACENT TO ALL ACCELERATION LANES AND TAPERS AND DECELERATION LANES AND TAPERS.

DELINEATOR SYMBOLS AND TYPICAL CONFIGURATION

- TYPE I (CRYSTAL)
- TYPE I (YELLOW)
- TYPE I (RED)
- TYPE II (2 CRYSTAL)
- TYPE II (2 YELLOW)
- TYPE II (CRYSTAL–CRYSTAL BACK–TO–BACK)

COLORADO LICENSED
ERIK J. GRIEPENTROG
33280
PROFESSIONAL ENGINEER

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Horizontal Scale
10 0 10 20
1" = 20'

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Computer File Information			
Creation Date: 06/02/2015	Initials: MG		
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Acad Ver. 2014	Scale: AS NOTED	Units: ENGLISH	

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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

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Revised:	
Void:	

SIGNAGE AND MARKING PLAN
STA 113+75 TO STA 116+25

Designer:	MG		
Detailer:	MG		
Sheet Subset:		Subset Sheet::	of

Project No./Code

Sheet Number 16

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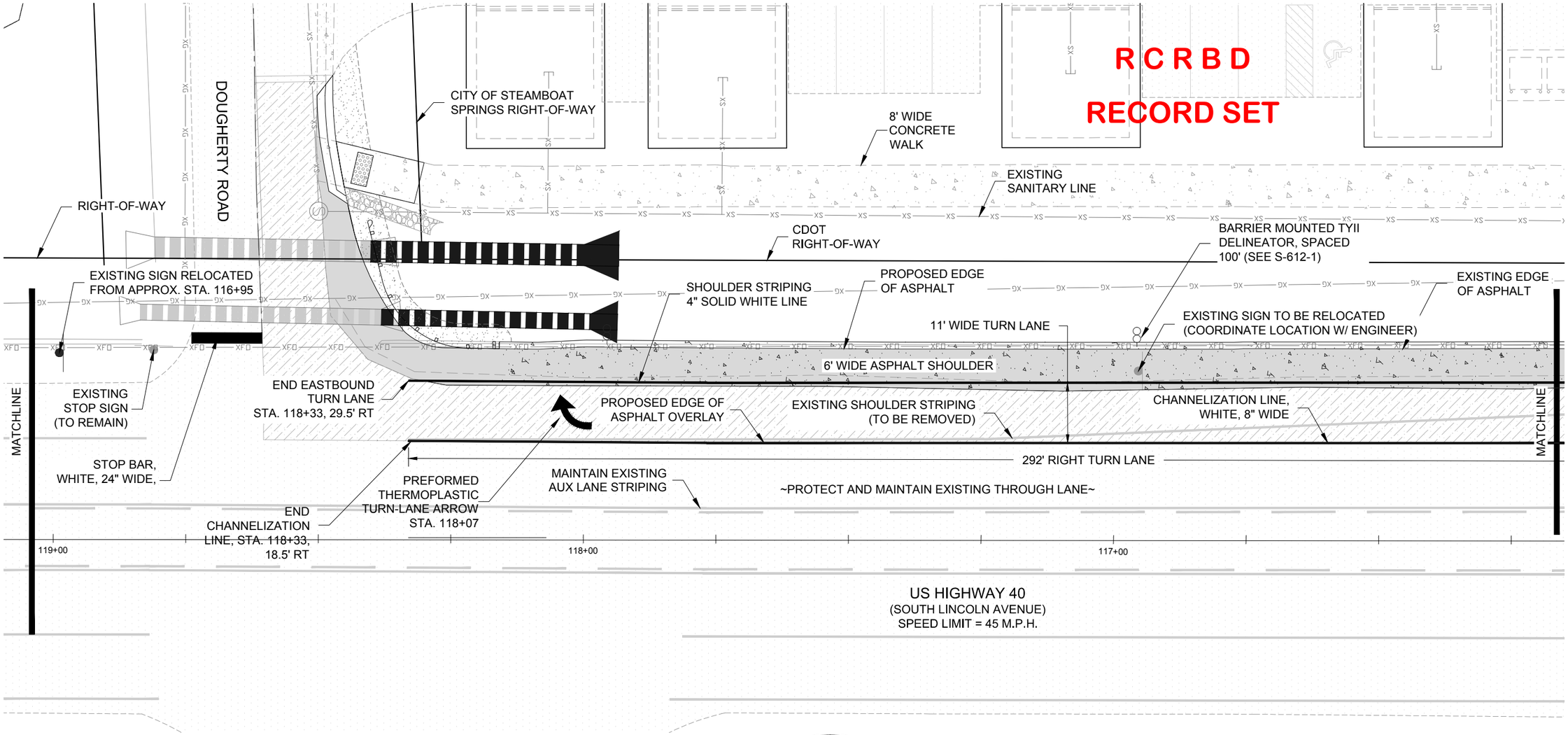

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PROFESSIONAL ENGINEER

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Horizontal Scale
10 0 10 20
1" = 20'

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Computer File Information			
Creation Date: 06/02/2015	Initials: MG		
Last Modification Date: 11/03/2015	Initials: TB		
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Acad Ver. 2014	Scale: AS NOTED	Units: ENGLISH	

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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

Notice to Proceed	SIGNAGE AND MARKING PLAN STA 116+25 TO STA 119+00			Project No./Code
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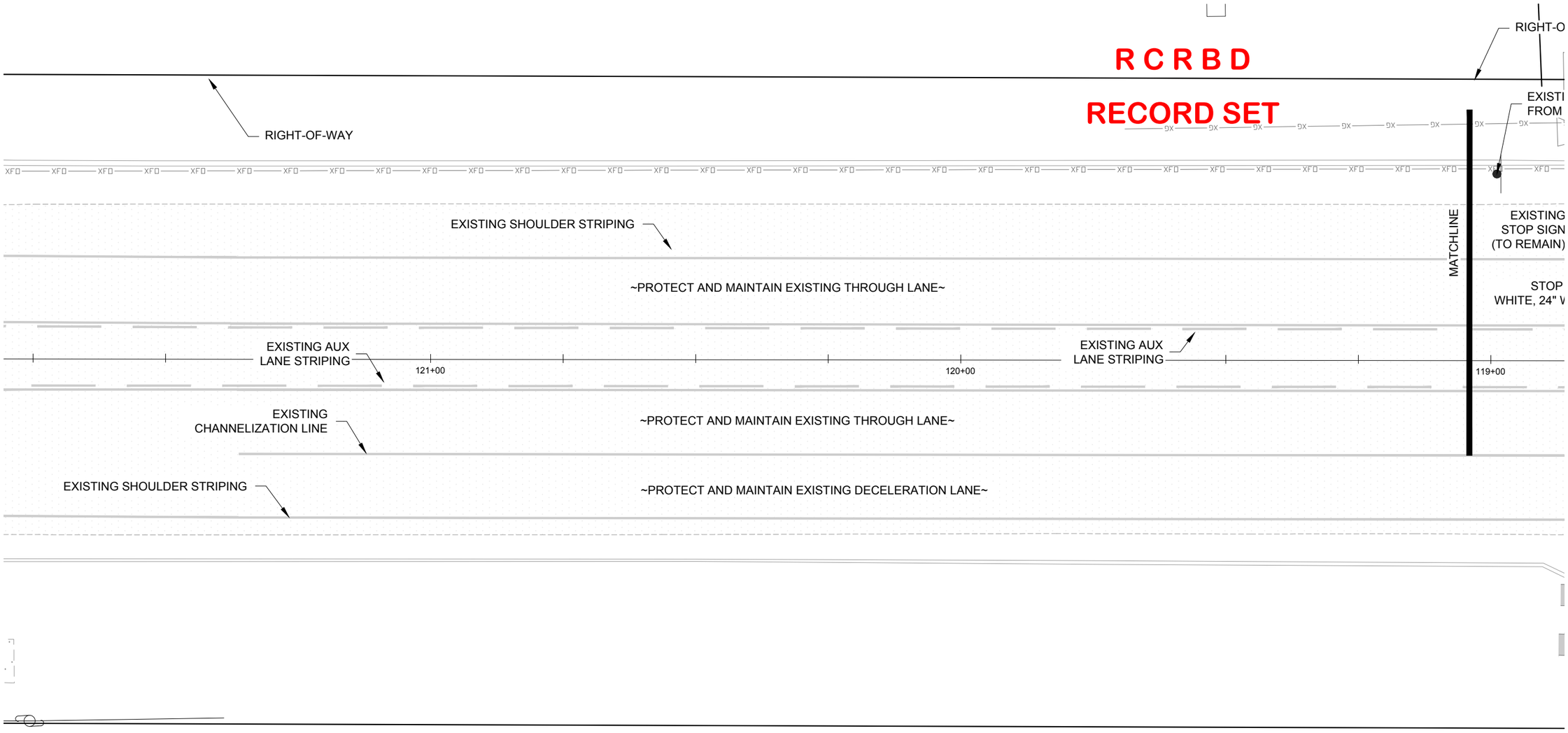

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33280
PROFESSIONAL ENGINEER

NOT VALID WITHOUT ORIGINAL
SIGNATURE AND DATE

Horizontal Scale
10 0 10 20
1" = 20'

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Computer File Information			Index of Revisions			STEAMBOAT CHRISTIAN CENTER COLORADO STATE HIGHWAY 40 ACCESS AND LANE IMPROVEMENTS	Notice to Proceed	EXISTING SIGNAGE AND MARKING STA 119+00 TO STA 121+80			Project No./Code
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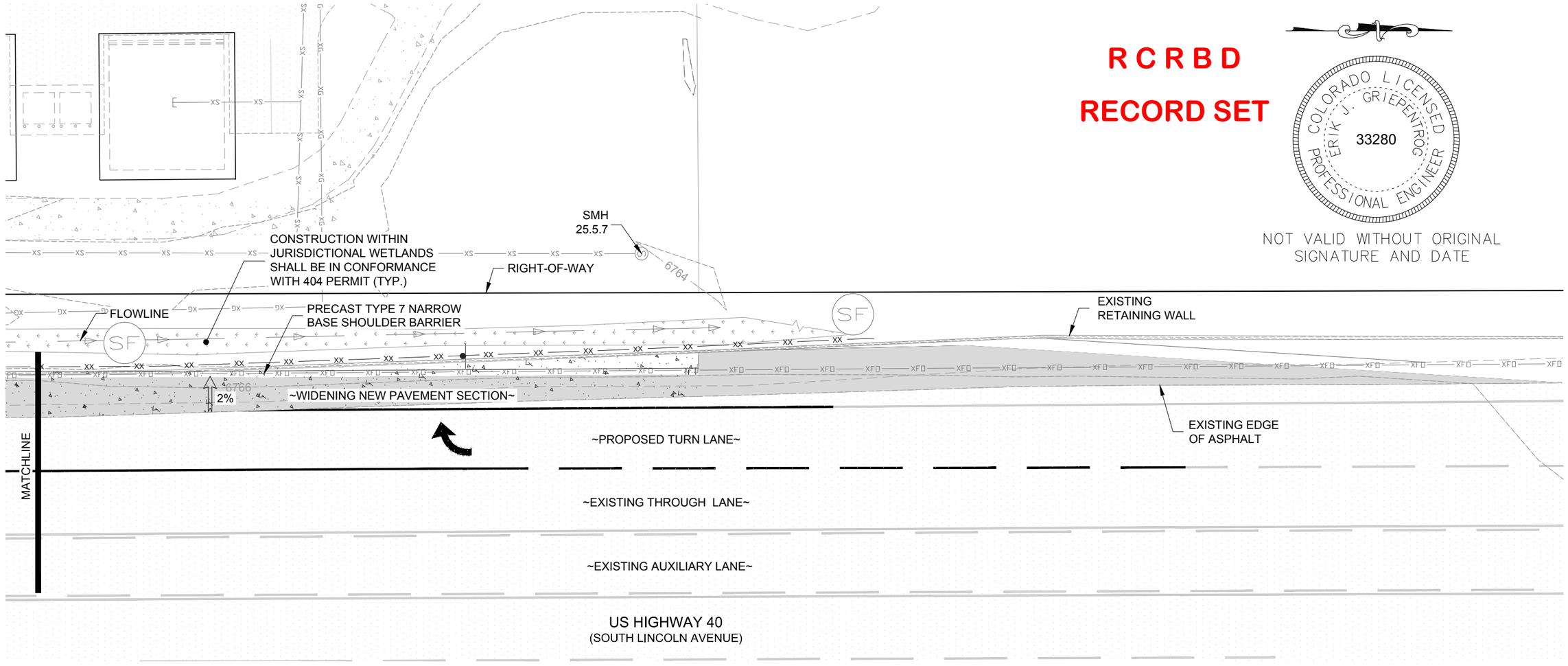

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33280
PROFESSIONAL ENGINEER

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SIGNATURE AND DATE

EROSION CONTROL NOTES

A. IT SHOULD BE NOTED THAT ANY EROSION CONTROL PLAN SERVES ONLY AS A GUIDELINE TO THE CONTRACTOR. STAGING AND/OR PHASING OF BEST MANAGEMENT PRACTICES (BMPs) IS EXPECTED. ADDITIONAL AND/OR DIFFERENT BMPs FROM THOSE ORIGINALLY DEPICTED MAY BE NECESSARY DURING CONSTRUCTION DUE TO CHANGING SITE CONDITIONS OR AS REQUIRED BY LOCAL AUTHORITIES.

B. THIS EROSION CONTROL PLAN IS SCHEMATIC IN NATURE. AS SUCH, GRAPHICAL SYMBOLS MAY NOT BE TO SCALE, NOR ARE THEY NECESSARILY SHOWN IN THEIR EXACT LOCATION.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITTING (CITY, STATE DISCHARGE PERMIT, ETC.) AND COMPLIANCE WITH GOVERNING AUTHORITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR (OR PERMIT HOLDER) TO ENSURE EROSION CONTROL MEASURES ARE PROPERLY MAINTAINED AND FOLLOWED.

D. CONTRACTOR SHALL IMPLEMENT THE APPROPRIATE EROSION CONTROL MEASURES ACCORDING THE THE CONSTRUCTION SEQUENCING AND LEVEL OF SITE STABILIZATION.

E. CONTRACTOR SHALL IMPLEMENT APPROPRIATE INLET PROTECTION FOR ALL STORM DRAINS, SWALES, PONDS AND RAIN GARDENS UNTIL SITE IS FULLY STABILIZED.

F. INLET PROTECTION SHALL BE ADAPTED, AS NECESSARY, TO THE SURROUNDING SURFACE TYPE AND CONDITION (i.e., STAKE-DRIVEN WATTLES FOR BARE SOIL, SAND BAGS OR GRAVEL SOCKS FOR PAVEMENT, ETC.)

G. CONTRACTOR IS RESPONSIBLE FOR STABILIZING ALL SLOPES, PARTICULARLY THOSE STEEPER THAN 6:1. CRIMP MULCHING, HYDRO MULCHING, EROSION MATS, TEMPORARY IRRIGATION, AND ADDITIONAL WATTLES OR SILT FENCING MAY BE NECESSARY TO ESTABLISH VEGETATIVE COVER AND STABILIZE THE SLOPE.

H. ADDITIONAL WATTLES, SILT FENCE, OR OTHER MEASURES, MAY BE NECESSARY TO INSURE THAT EACH BUILDING PAD IS STABILIZED THROUGHOUT CONSTRUCTION. AT NO TIME SHALL SEDIMENT BE ALLOWED TO CROSS THE PUBLIC SIDEWALKS.

TEMPORARY BMP'S

STRAW WATTLES	SW	
SILT FENCE	SF	xx
CONCRETE WASHOUT AREA	CWA	

Horizontal Scale
10 0 10 20
1" = 20'

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Computer File Information		Index of Revisions			STEAMBOAT CHRISTIAN CENTER COLORADO STATE HIGHWAY 40 ACCESS AND LANE IMPROVEMENTS	Notice to Proceed	STORMWATER MANAGEMENT PLAN STA 113+75 TO STA 116+25			Project No./Code
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Last Modification Date:	Initials:					Revised:	Designer: TB			
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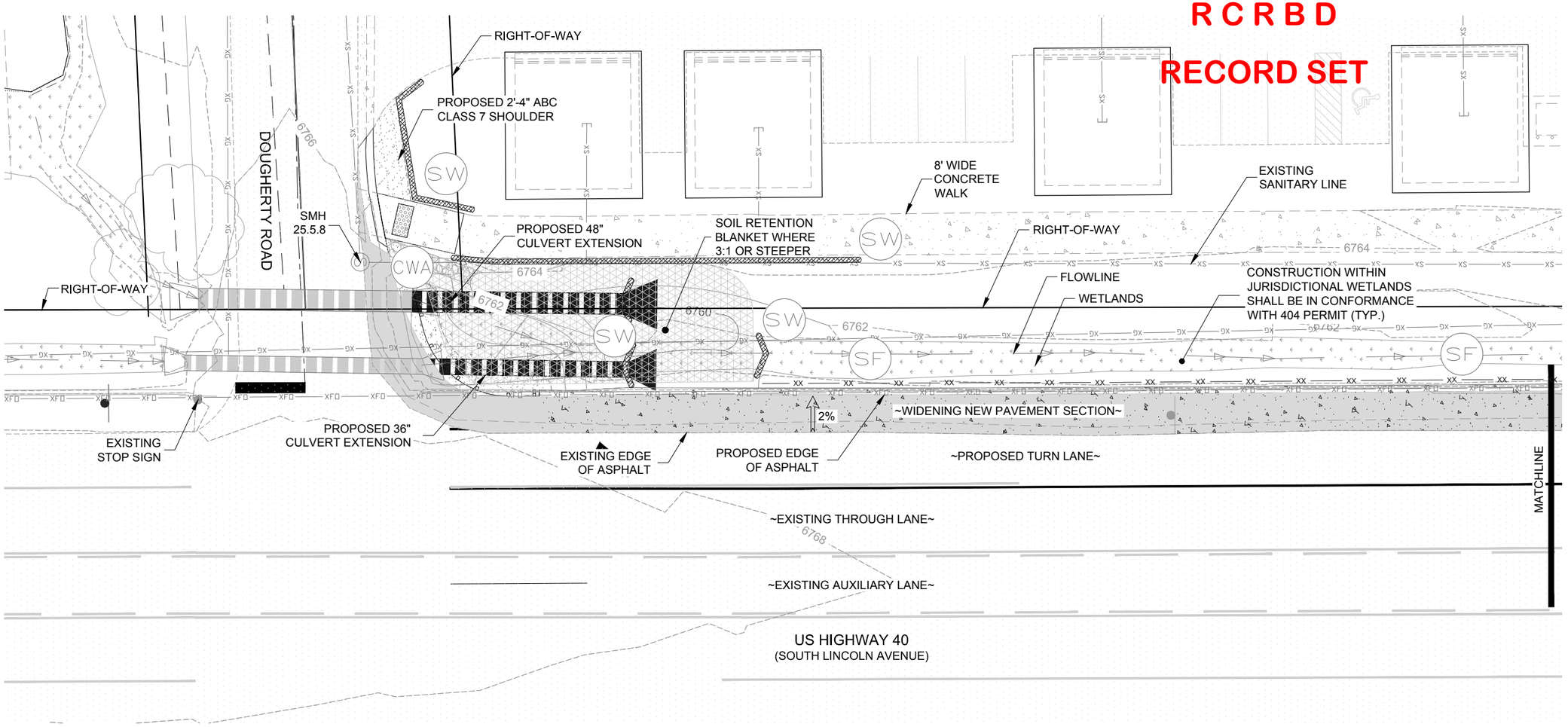

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33280
PROFESSIONAL ENGINEER

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Horizontal Scale
10 0 10 20
1" = 20'

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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

Notice to Proceed	STORMWATER MANAGEMENT PLAN STA 116+25 TO STA 119+00	Project No./Code
No Revisions:		
Revised:	Designer: TB	
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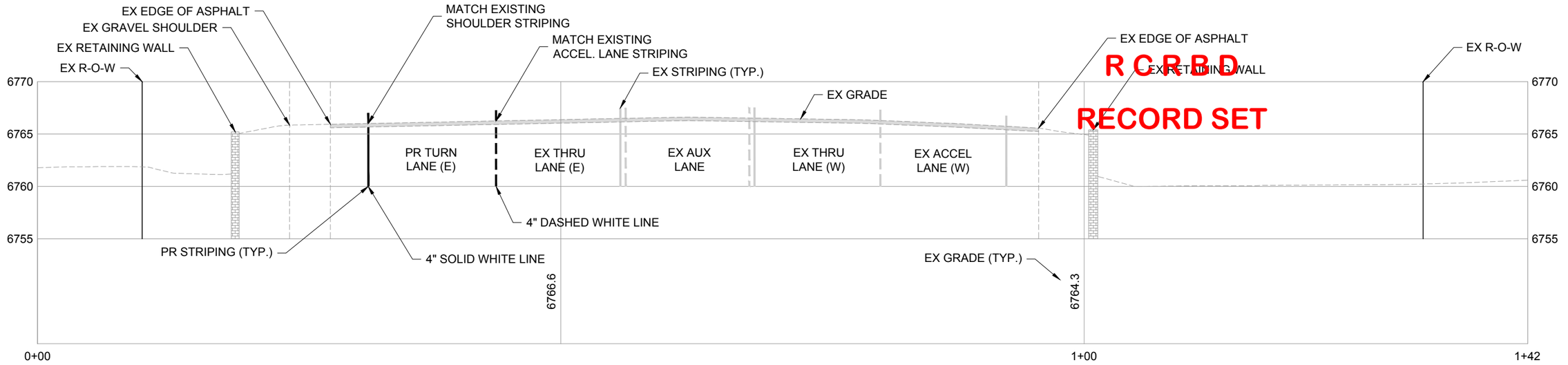

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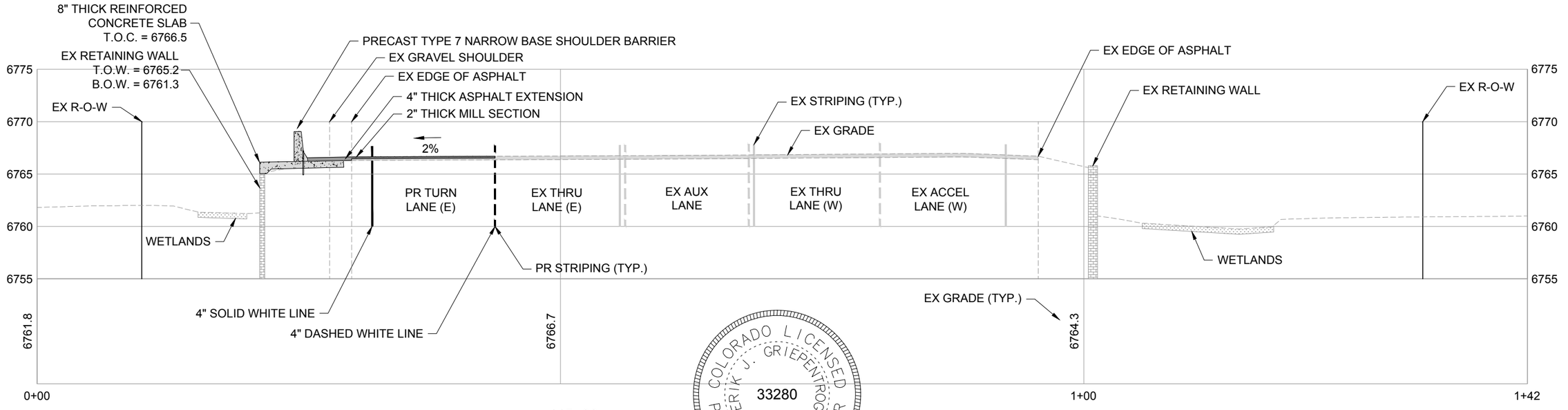

115+00

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PROFESSIONAL ENGINEER

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Vertical Scale: 1" = 1'

Horizontal Scale
5 0 5 10
1" = 10'

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Last Modification Date: 01/07/2016 Initials: TB				
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Drawing File Name: 1570-004-HW-XSEC.DWG				
Acad Ver. 2014 Scale: AS NOTED Units: ENGLISH				

STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

Notice to Proceed
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Void:

US HIGHWAY 40 CROSS SECTIONS STA. 114+02 TO 115+00

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Detailer:	MG		
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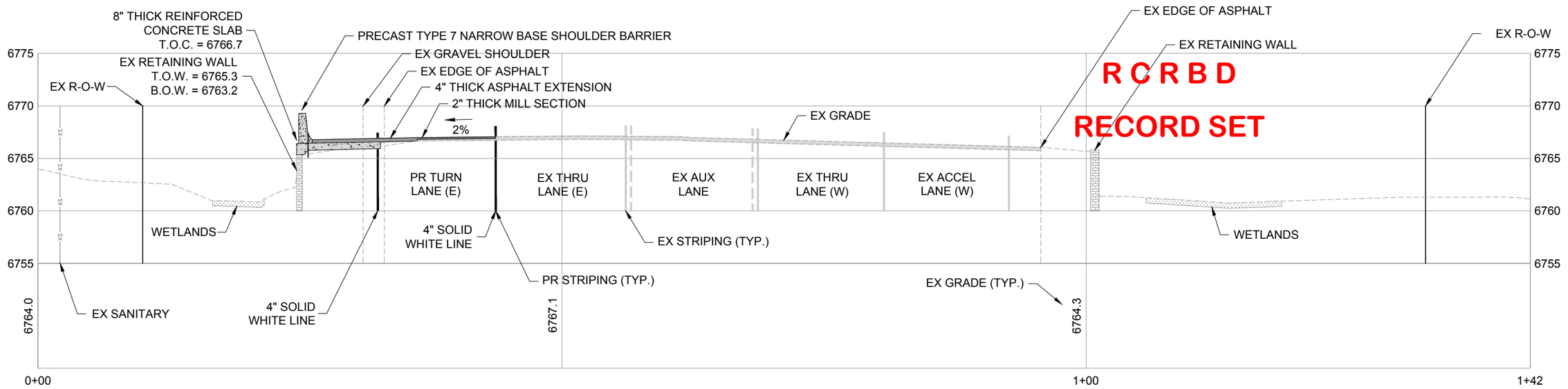
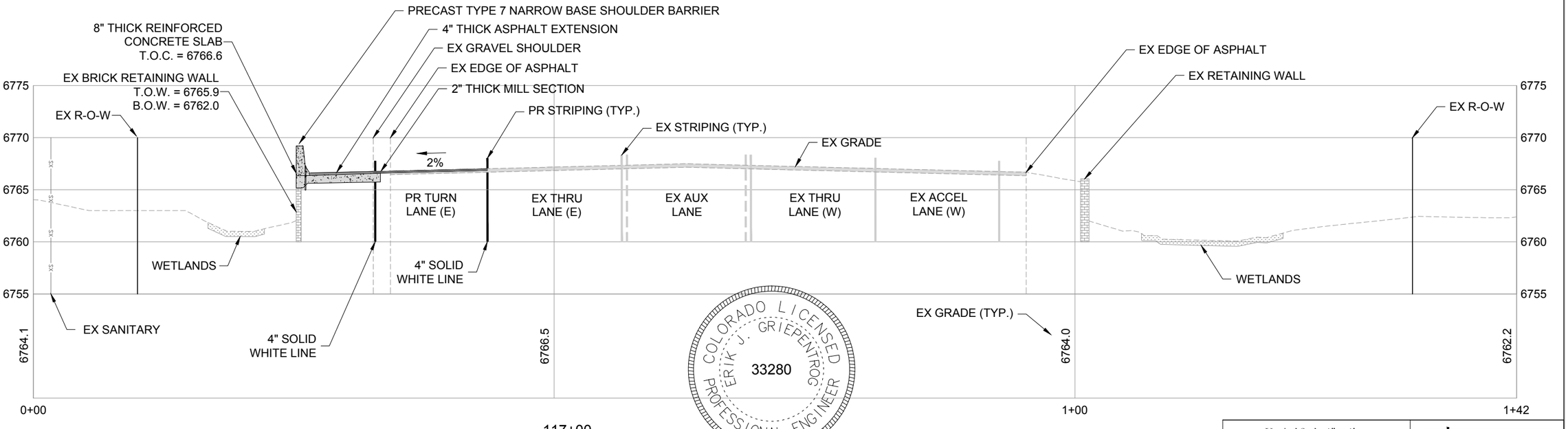


116+00



117+00

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Vertical Scale: 1" = 1'

Horizontal Scale
5 0 5 10
1" = 10'

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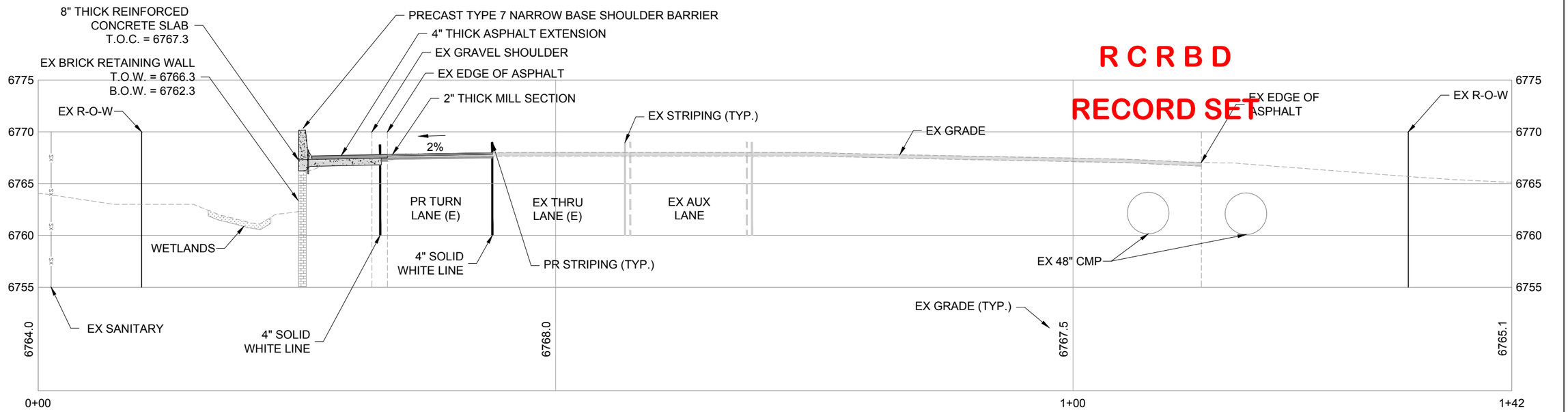

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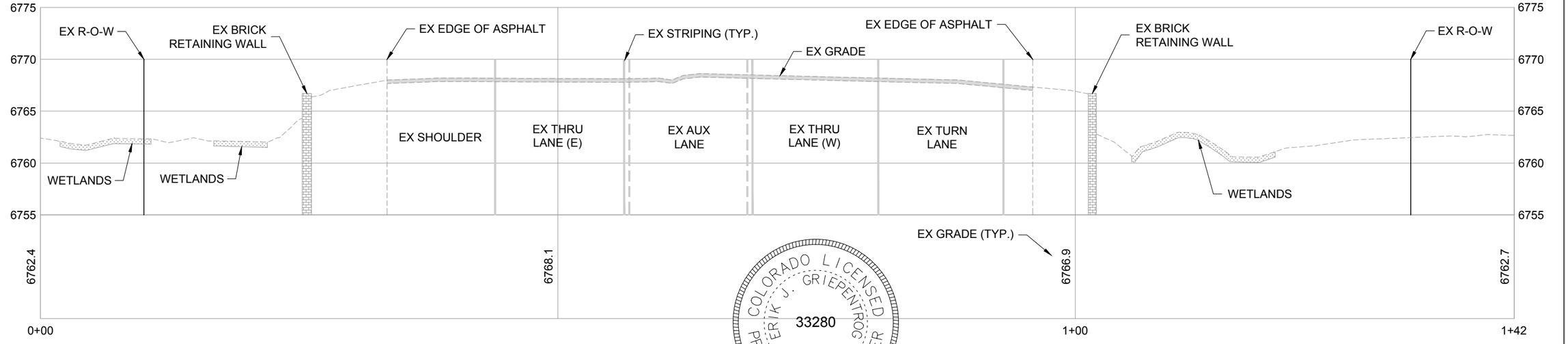

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ERIK J. GRIEPENTROG
33280
PROFESSIONAL ENGINEER

NOT VALID WITHOUT ORIGINAL SIGNATURE AND DATE

Vertical Scale: 1" = 1'

Horizontal Scale
5 0 5 10
1" = 10'

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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
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Void:

US HIGHWAY 40 CROSS SECTIONS STA. 118+00 TO 118+90

Designer:	MG		
Detailer:	MG		
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Project No./Code

Sheet Number 23

RCRBD

RECORD SET

EXISTING VALLEY PAN

RIGHT-OF-WAY

PR 3' WIDE VALLEY PAN

ABC CLASS 6 GRAVEL SHOULDER

INSTALL EAST JORDAN IRON WORKS ADA DETECTABLE WARNING PLATES (3'x6')

DOUGHERTY ROAD

REPLACE APPROX. 150 SQ FT. SECTION OF CONCRETE WALK

MATCH EX WALK SAW-CUT AT CJ

8' WIDE EX CONC WALK

TYPE 3K LOW SPEED TERMINAL END SECTION. PROVIDE MIN. 24" CLEARANCE FROM WALK

ABC CLASS 6 GRAVEL SHOULDER

EXISTING SANITARY SEWER

RIP-RAP LINED OUTFALL

PR. INV OUT = 6759.23 ALTERNATIVE FLARED END SECTION FROM CDOT M&S STANDARD BOOK (M-603-10) GRADE OUTFALL TO DRAIN

CONSTRUCTION WITHIN JURISDICTIONAL WETLANDS SHALL BE IN ACCORDANCE WITH 404 PERMIT (TYP.)

EX 48" CMP

EX. INV. OUT = 6760.14

2:1 MAX

RIGHT-OF-WAY

EX. INV. IN = 6760.77

EXISTING FLOWLINE

EX. INV. IN = 6761.51

EX 36" CMP

EX. INV. OUT = 6760.79

PR FLOWLINE

CLEAN EXISTING CULVERTS

TYPE 7 CONCRETE BARRIER TO SINGLE TYPE 3G GUARDRAIL TRANSITION AND ANCHORAGE

TYPE 3J GUARDRAIL TRANSITION W/ WOODEN CRT POSTS COORDINATE POST LAYOUT W/ CULVERTS AND SANITARY LINE. CONFIRM W/ ENGINEER PRIOR TO INSTALLATION

REMOVE APPROXIMATELY 23' OF EXISTING WALL

PR. INV OUT = 6760.08 ALTERNATIVE FLARED END SECTION FROM CDOT M&S STANDARD BOOK (M-603-10) GRADE OUTFALL TO DRAIN

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ERIK J. GRIEPENTROG
33280
PROFESSIONAL ENGINEER

NOT VALID WITHOUT ORIGINAL SIGNATURE AND DATE

Vertical Scale: 1" = 4'

Horizontal Scale

5 0 5 10

1" = 10'

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STEAMBOAT CHRISTIAN CENTER
COLORADO STATE HIGHWAY 40
ACCESS AND LANE IMPROVEMENTS

Notice to Proceed	CULVERT EXTENSION PLAN				Project No./Code
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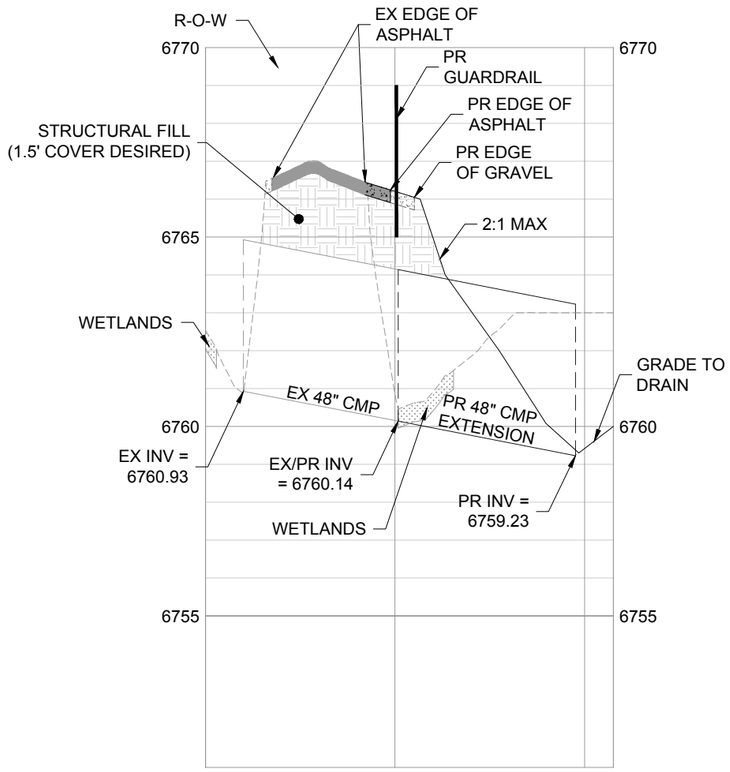
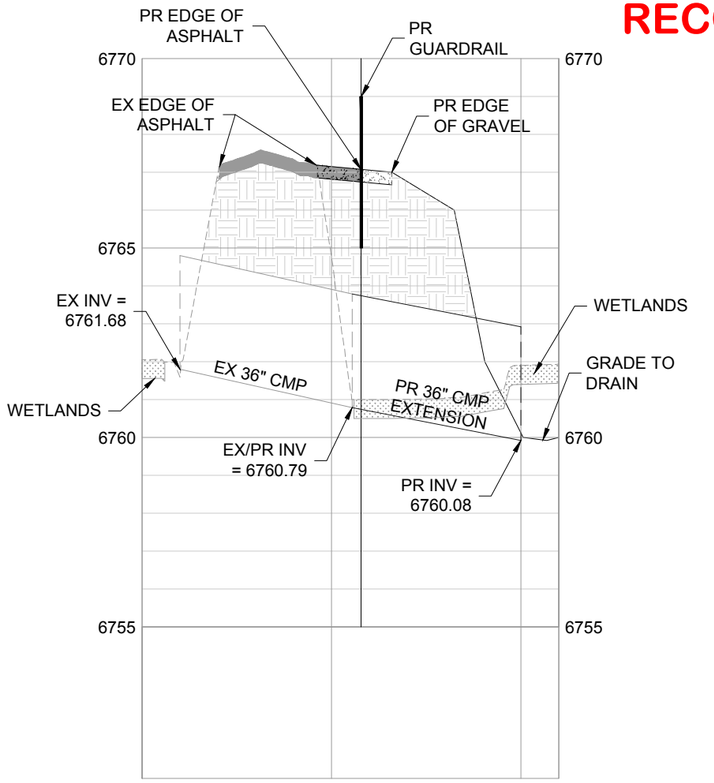


48" CMP EXTENSION



36" CMP EXTENSION

SCALE:
1" = 40' HORIZONTAL
1" = 4' VERTICAL

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Vertical Scale: 1" = 4'

Horizontal Scale
20 0 20 40
1" = 40'

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Drawing File Name: 1570-004-HW-CULVERT EXTENSION.DWG						Void:	Sheet Subset:	Subset Sheet::	of	Sheet Number 25
Acad Ver. 2014 Scale: AS NOTED Units: ENGLISH										

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RECORD SET

GENERAL STRUCTURAL NOTES

DESIGN LIVE LOADS

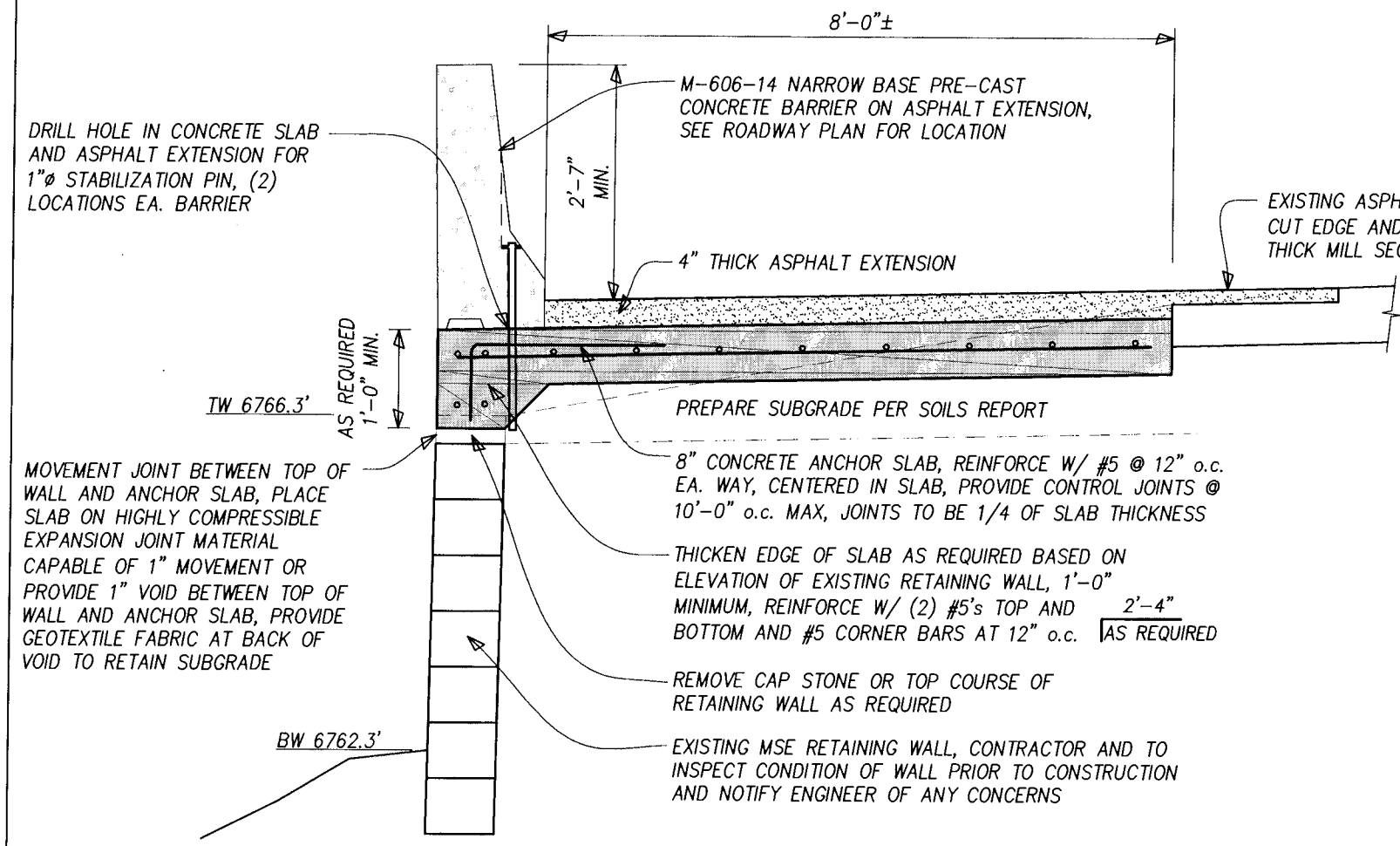
a. Uniform and Concentrated Load Class shall be H20-44 and HS20-44

SOILS REPORT

a. Soils report 12-9255 by Northwest Colorado Consultants, Inc.

REINFORCED CONCRETE

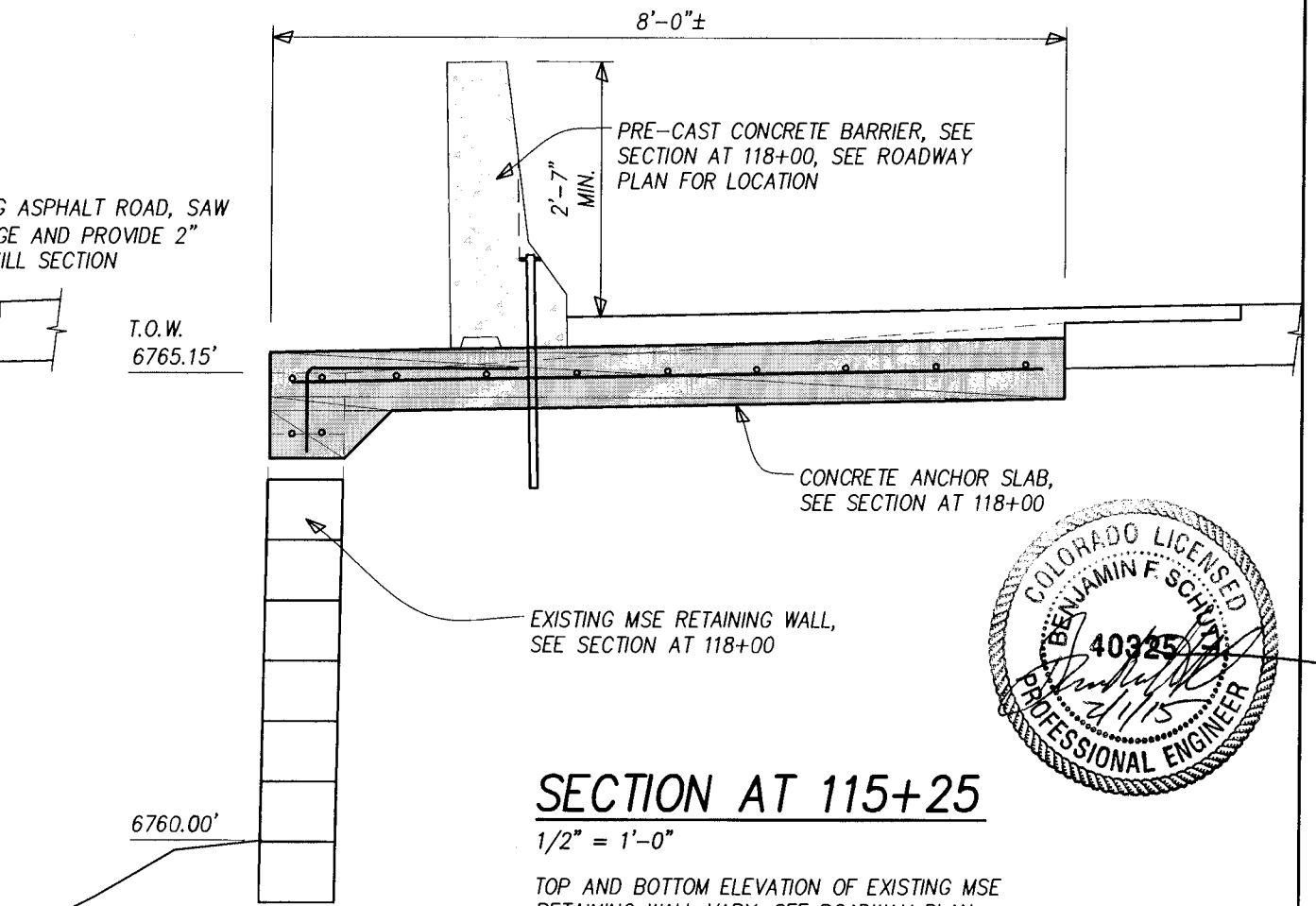
a. Structural concrete shall be CDOT Class D, have o minimum 28 day compressive strength of 4500 psi, be entrained with approximately 6% air, a maximum water/cement ratio of 0.42 and a maximum slump of 4".
b. Concrete shall be placed in general accordance with Section 412 of the CDOT Standard Specifications for Road and Bridge Construction, 2011, and conform to AASHTO Specification M157 and ASTM Specification C94.
c. Reinforcing bars shall conform to AASHTO Specification M31 and ASTM Specification A615 and shall be Grade 60.
d. Epoxy coated reinforcing bars shall conform to AASHTO Specification M284 and ASTM Specification A775 and shall be Grade 60.
e. At splices, lap bars 38 diameters (44 diameters for epoxy coated bars). At corners and intersections, make horizontal bars continuous or provide matching corner bars.



SECTION AT 118+00

1/2" = 1'-0"

TOP AND BOTTOM ELEVATION OF EXISTING MSE RETAINING WALL VARY, SEE ROADWAY PLAN



SECTION AT 115+25

1/2" = 1'-0"

TOP AND BOTTOM ELEVATION OF EXISTING MSE RETAINING WALL VARY, SEE ROADWAY PLAN

COLORADO LICENSED
BENJAMIN F. SCHUTZ
40325
2/1/15
PROFESSIONAL ENGINEER

ALPENGLOW ENGINEERING SOLUTIONS, INC.
Consulting Structural Engineers
137 12th Street, P.O. Box 770001, Steamboat Springs, CO 80477, 970.879.1181, alpenglowcorp.com

LANDMARK CONSULTANTS, INC.
141 9th Street, P.O. Box 774945, Steamboat Springs, Colorado 80477, Phone (970) 871-0894, www.LANDMARK-CO.com

Computer File Information			Index of Revisions			STEAMBOAT CHRISTIAN CENTER COLORADO STATE HIGHWAY 40 ACCESS AND LANE IMPROVEMENTS	Notice to Proceed	ANCHOR SLAB DETAILS		Project No./Code
Creation Date: 9/25/14	Initials: CAS						No Revisions:			
Last Modification Date: 2/1/16	Initials: BFS						Revised:	Designer: BFS		
Full Path:								Detailer: CAS		
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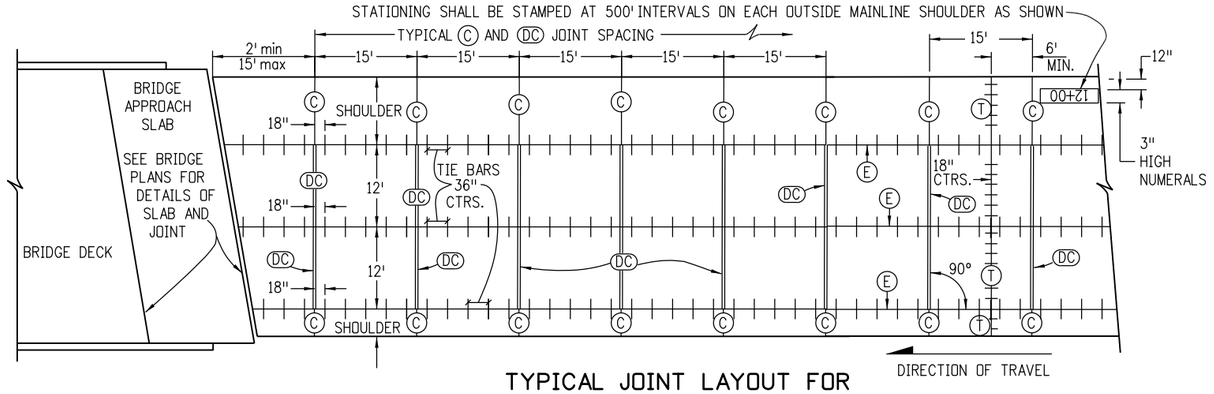
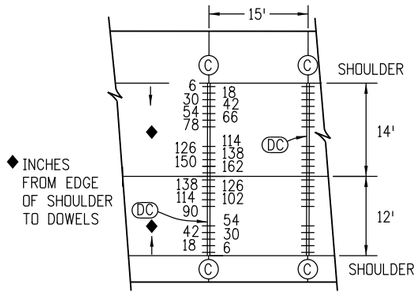
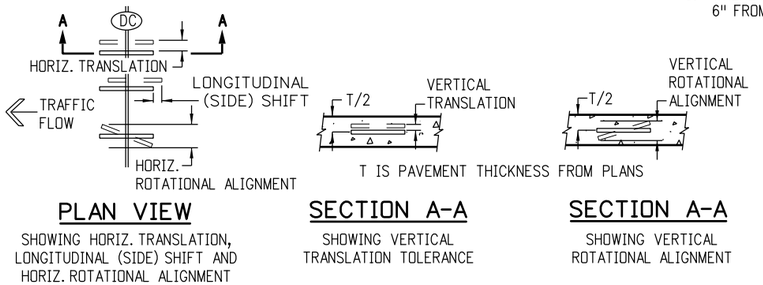


TYPICAL JOINT LAYOUT FOR CONCRETE ROADWAY WITH CONCRETE SHOULDERS



DOWEL BAR DETAIL FOR (DC) JOINT WITH 14 FT. AND 12 FT. LANES

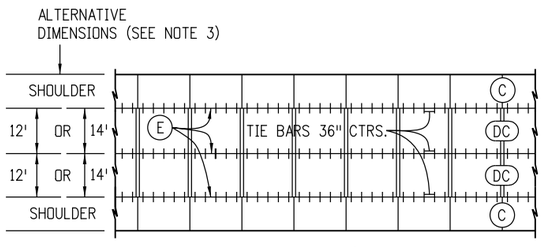


PLAN VIEW
SHOWING HORIZ. TRANSLATION, LONGITUDINAL (SIDE) SHIFT AND HORIZ. ROTATIONAL ALIGNMENT

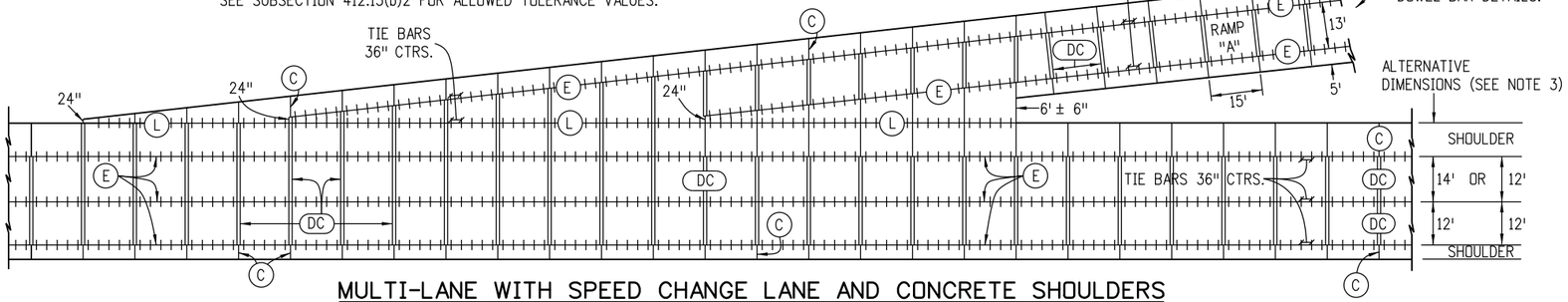
SECTION A-A
SHOWING VERTICAL TRANSLATION TOLERANCE

SECTION A-A
SHOWING VERTICAL ROTATIONAL ALIGNMENT

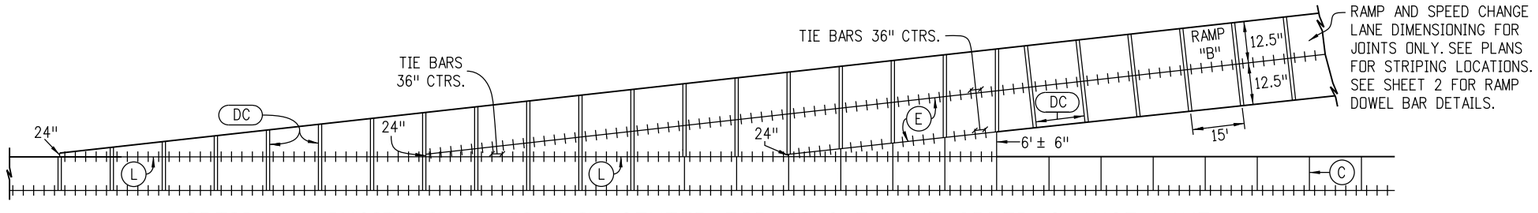
DETAILS ILLUSTRATING DOWEL PLACEMENT TOLERANCES
SEE SUBSECTION 412.13(b)2 FOR ALLOWED TOLERANCE VALUES.



RURAL TWO-LANE



MULTI-LANE WITH SPEED CHANGE LANE AND CONCRETE SHOULDERS



OPTIONAL LONGITUDINAL JOINT IN CENTER FOR SINGLE LANE SPEED CHANGE LANE

GENERAL NOTES

1. THIS STANDARD PLAN DOES NOT APPLY TO THIN CONCRETE OVERLAYS (WHITETOPPING).
2. LOCATE (T) JOINT AT A (C) JOINT OR A MINIMUM OF 6 FT. FROM A (C) JOINT.
3. THIS JOINT LAYOUT SHALL BE USED AS A STANDARD OF THE JOINT LAYOUT FOR THE PROJECT. IF THE CONTRACTOR PROPOSES VARIATIONS FROM THIS STANDARD OR THE PROJECT HAS UNUSUAL OR IRREGULAR CONDITIONS NOT COVERED HEREIN, THE CONTRACTOR SHALL PREPARE A PAVEMENT JOINT LAYOUT FOR APPROVAL BY THE ENGINEER. SLABS 14 FT. IN WIDTH SHALL BE CONSTRUCTED ONLY WHERE DESIGNATED ON THE PLANS.
4. ON MULTILANE DIVIDED HIGHWAYS, THE MULTILANE DIRECTIONAL PAVEMENT AND BOTH SHOULDERS SHALL BE PLACED WITH (E) LONGITUDINAL SAWED CONTRACTION JOINTS.
5. ON MULTILANE DIVIDED HIGHWAYS SEPARATED BY A CONCRETE BARRIER, A (D) JOINT SHALL BE CONSTRUCTED AT ONE OF THE BARRIER FACES.
6. (D) JOINTS SHALL BE CONSTRUCTED BETWEEN THE TWO OPPOSING DIRECTIONS OF TRAVEL ON A MULTILANE UNDIVIDED HIGHWAY WHEN ALL OF THE FOLLOWING APPLY:
   A. PAVEMENT IS CONTINUOUS ACROSS BOTH DIRECTIONS OF TRAVEL.
   B. THERE IS NO MEDIAN BARRIER.
   C. THE WIDTH OF THE PAVEMENT IN ONE DIRECTION IS GREATER THAN 80 FEET.
7. ON VARIABLE WIDTH SLABS, THE 2 FT. OR 4 FT. END OF SLAB WIDTH DIMENSION MAY VARY ±6 INCHES.
8. (L) JOINTS ARE TO BE USED WHEN A TRAFFIC LANE IS ADDED SEPARATELY, OR FOR TAPERS, OR FOR SPEED CHANGE LANES. ALTERNATIVE LONGITUDINAL JOINT LOCATIONS AT SPEED CHANGE LANES MAY BE USED IF APPROVED.
9. WHERE (DC) JOINTS ARE SHOWN IN THE SHOULDER, THE DOWEL BARS WILL BE PLACED ON 12" CENTERS STARTING 6" FROM THE ROADWAY (E) JOINT.

JOINT LEGEND
(SEE SHEET 5 FOR JOINT DETAILS)

- (C) TRANSVERSE CONTRACTION
- (D) LONGITUDINAL CONSTRUCTION
- (DC) DOWELED TRANSVERSE CONTRACTION
- (L) (E) LONGITUDINAL CONSTRUCTION OR LONGITUDINAL CONTRACTION
- (T) TRANSVERSE CONSTRUCTION

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: DD		Date:	Comments
Last Modification Date: 07/24/12 Initials: LTA	(R-X)	07/24/12	Changed Tie Bar spacing from 30" to 36".
Full Path: www.coloradodot.info/business/designsupport	(R-X)		
Drawing File Name: 412010105.dgn	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

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CONCRETE PAVEMENT JOINTS

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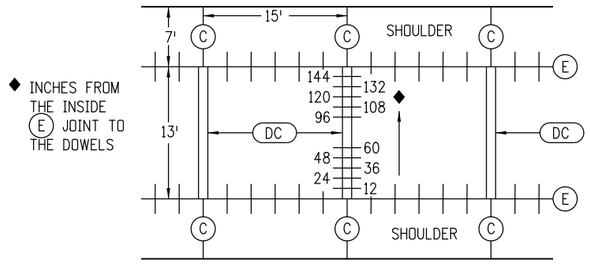
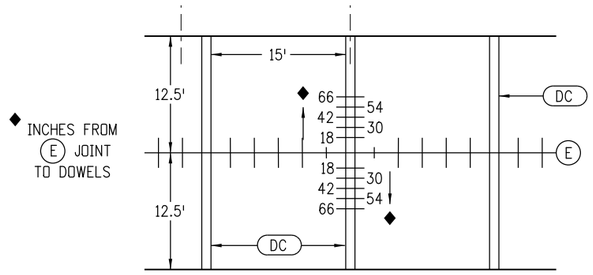
STANDARD PLAN NO.
M-412-1



RAMP "A" DOWEL BAR DETAIL
FOR DC JOINT WITH A 13 FT. LANE

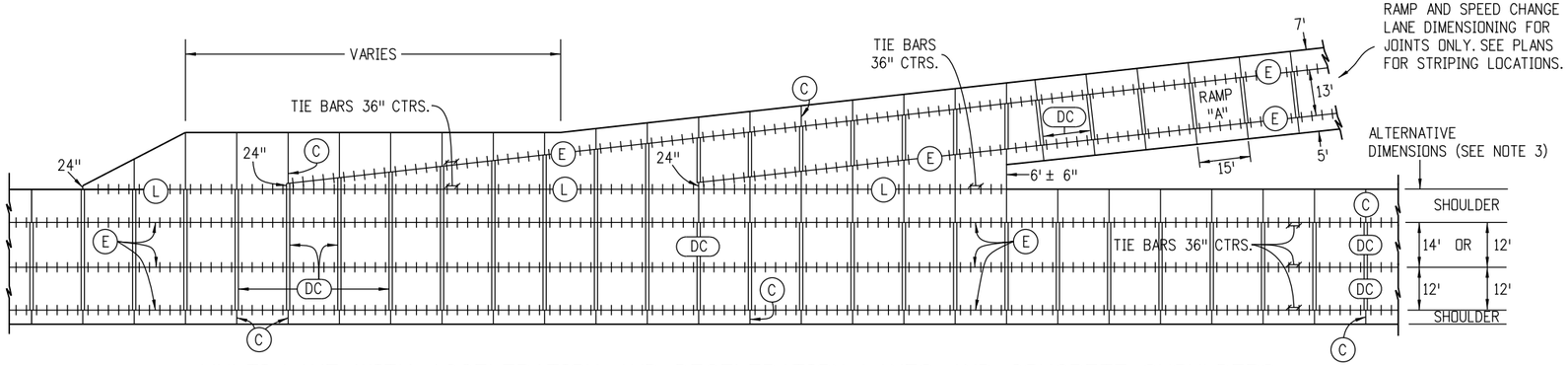


RAMP "B" DOWEL BAR DETAIL FOR DC JOINT
WITH CENTER LONGITUDINAL SPLIT LANE

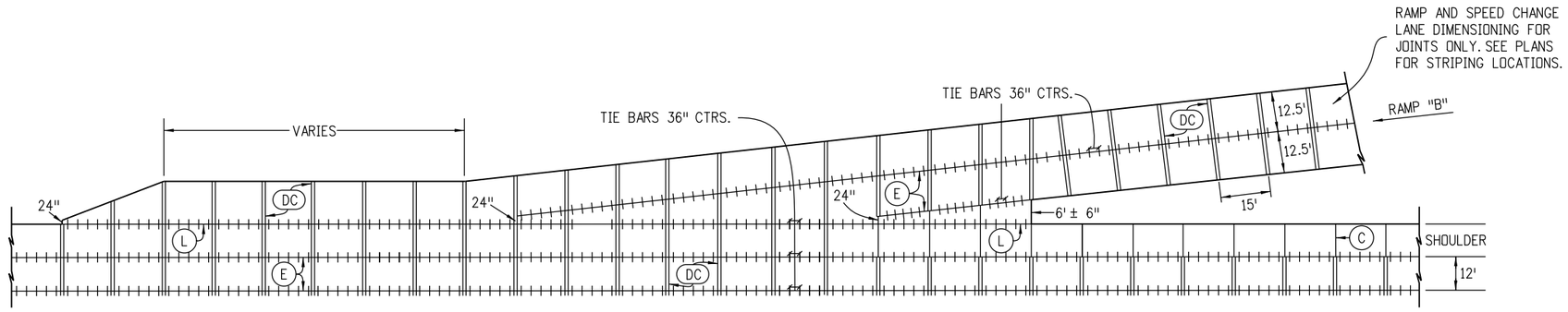
JOINT LEGEND

(SEE SHEET 5 FOR JOINT DETAILS)

- C — TRANSVERSE CONTRACTION
- D — LONGITUDINAL CONSTRUCTION
- DC — DOWELED TRANSVERSE CONTRACTION
- L — E — LONGITUDINAL CONSTRUCTION OR LONGITUDINAL CONTRACTION
- T — TRANSVERSE CONSTRUCTION



MULTI-LANE WITH ACCELERATION AND DECELERATION LANES AND CONCRETE SHOULDERS



OPTIONAL LONGITUDINAL JOINT IN CENTER FOR SINGLE LANE ACCELERATION AND DECELERATION LANE

Computer File Information		Sheet Revisions	
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Last Modification Date: 07/24/12 Initials: LTA	(R-X)	07/24/12	Changed Tie Bar spacing from 30" to 36".
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Drawing File Name: 412010205.dgn	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

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CONCRETE PAVEMENT JOINTS

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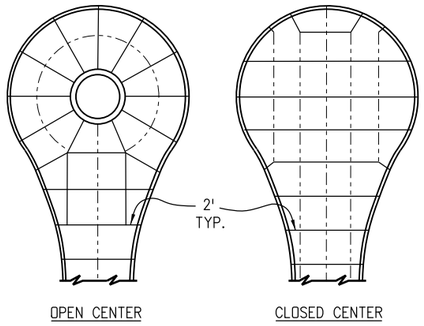
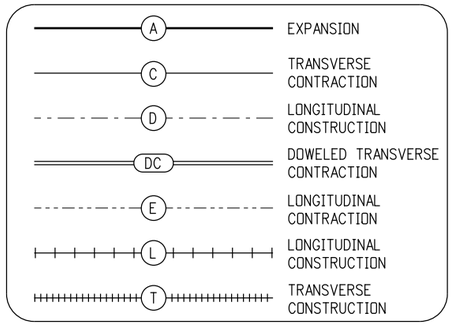
M-412-1



CUL-DE-SAC

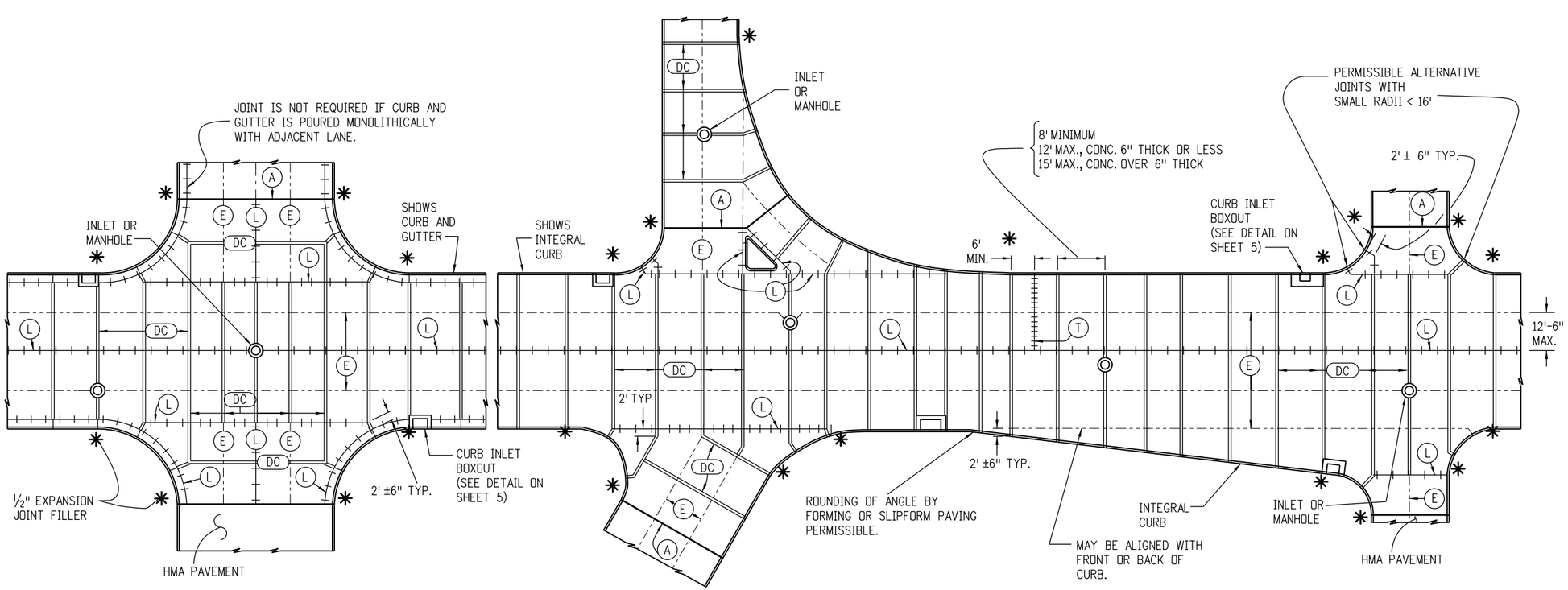
JOINT LEGEND

(SEE SHEET 5 FOR JOINT DETAILS)



NOTES

1. LONGITUDINAL JOINTS SHALL BE PLACED ADJACENT TO LANE MARKINGS WHEN POSSIBLE, AND HAVE A MAXIMUM SPACING OF 12 FT.-6 IN. (15 FT. IS PERMITTED WITH MONOLITHIC CURB AND GUTTER).
2. CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE CENTERLINE OF PAVEMENT AND EXTEND THROUGH THE CURB OR CURB AND GUTTER.
3. * PLACE ½ IN. MIN. EXPANSION JOINT FILLER IN TOP 6 IN. OF CURB JOINT AT INTERSECTION RETURN RADIUS POINTS.
4. THE CONTRACTOR SHALL, UNLESS OTHERWISE SHOWN ON THE PLANS, SELECT AND USE A BOND BREAKER AT INLETS, MANHOLES AND SIMILAR SIZE STRUCTURES. SMALLER STRUCTURES SUCH AS VALVE AND MONUMENT BOXES SHALL NOT REQUIRE A BOND BREAKER.
5. WHERE A LONGITUDINAL JOINT PASSES LESS THAN 1 FT. FROM A CAST-IN-PAVEMENT MANHOLE OR SIMILAR SIZE STRUCTURE, A TYPICAL 2 FT. RADIAL JOINT, AS SHOWN IN THE DETAILS, SHALL BE USED.
6. TRANSVERSE JOINTS SHALL EITHER INTERSECT THE CENTER OF CIRCULAR MANHOLES AND INLETS OR BE AT LEAST 4 FT. AWAY FROM THE EDGE OF CIRCULAR MANHOLES. SEE CURB INLET BOXOUT DETAIL ON SHEET 5.
7. LOCATE (T) JOINT AT A (DC) JOINT OR A MINIMUM OF 6 FT. FROM A (DC) JOINT.
6. THE ENGINEERS SHALL HAVE AN OPTION TO USE INDIVIDUAL DOWELS IN THE DC JOINT ON SHORT RUN (2' ± 6") TO CURB RADIUS RETURNS.



TYPICAL CURBED PAVEMENT JOINT LAYOUT

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STANDARD PLAN NO.
M-412-1
Sheet No. 3 of 5

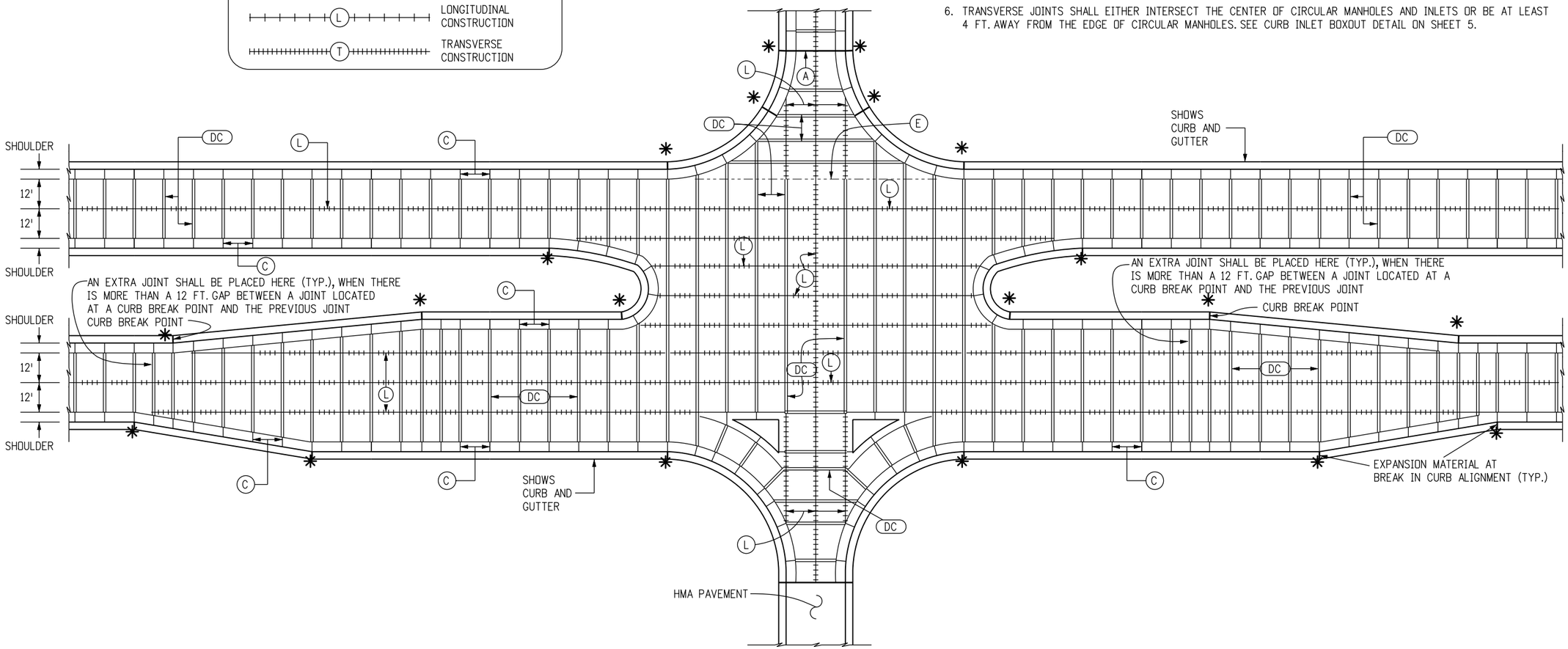
JOINT LEGEND

(SEE SHEET 5 FOR JOINT DETAILS)

A	EXPANSION
C	TRANSVERSE CONTRACTION
D	LONGITUDINAL CONSTRUCTION
DC	DOWELED TRANSVERSE CONTRACTION
E	LONGITUDINAL CONTRACTION
L	LONGITUDINAL CONSTRUCTION
T	TRANSVERSE CONSTRUCTION

NOTES

1. LONGITUDINAL JOINTS SHALL BE PLACED ADJACENT TO LANE MARKINGS WHEN POSSIBLE, AND HAVE MAXIMUM SPACING OF 12 FT.-6 IN. (15 FT. IS PERMITTED WITH MONOLITHIC CURB AND GUTTER).
2. CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE CENTERLINE OF PAVEMENT AND EXTEND THROUGH THE CURB OR CURB AND GUTTER.
3. * PLACE ½ IN. MIN. EXPANSION JOINT FILLER IN TOP 6 IN. OF CURB JOINT AT INTERSECTION RETURN RADIUS POINTS.
4. THE CONTRACTOR SHALL, UNLESS OTHERWISE SHOWN ON THE PLANS, SELECT AND USE A BOND BREAKER AT INLETS, MANHOLES AND SIMILAR SIZE STRUCTURES. SMALLER STRUCTURES SUCH AS VALVE AND MONUMENT BOXES DO NOT REQUIRE A BOND BREAKER.
5. WHERE A LONGITUDINAL JOINT WOULD PASS LESS THAN 1 FT. FROM A CAST-IN-PAVEMENT MANHOLE OR SIMILAR SIZE STRUCTURE, A TYPICAL 2 FT. RADIAL JOINT, AS SHOWN IN THE DETAILS, SHALL BE USED.
6. TRANSVERSE JOINTS SHALL EITHER INTERSECT THE CENTER OF CIRCULAR MANHOLES AND INLETS OR BE AT LEAST 4 FT. AWAY FROM THE EDGE OF CIRCULAR MANHOLES. SEE CURB INLET BOXOUT DETAIL ON SHEET 5.



MULTI-LANE INTERSECTION WITH SPEED CHANGE LANE AND CONCRETE SHOULDERS

Computer File Information		Sheet Revisions	
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Last Modification Date: 07/04/12 Initials: LTA	R-X		
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CONCRETE PAVEMENT JOINTS

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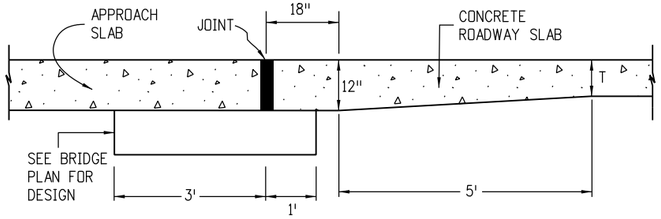
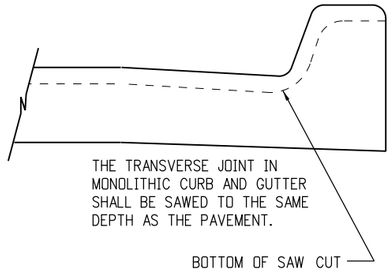
STANDARD PLAN NO.

M-412-1



BRIDGE APPROACH



NOTE

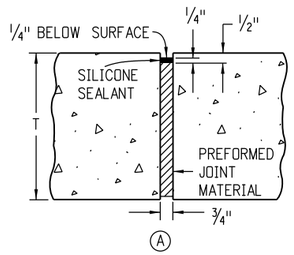
PAVEMENT THICKNESS (T), SHALL BE AS SHOWN ON THE PLANS.

PAVEMENT THICKNESS (T)	DOWEL BAR DIAMETER
T < 8 IN.	1 IN.
8 IN. ≥ T ≤ 10 IN.	1.25 IN.
10 IN. > T ≤ 15 IN.	1.50 IN.

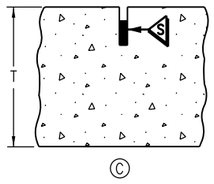
REINFORCING SIZE TABLE

TIE BAR SIZE IS NO. 5 WHEN PAVEMENT IS PLACED ON UNBOUND BASES.

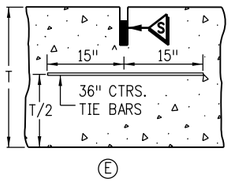
TIE BAR IS NO. 6 WHEN PAVEMENT IS PLACED ON LIME TREATED SOIL, ASPHALT OR CEMENT TREATED, MILLED ASPHALT, OR RECYCLED ASPHALT BASES.



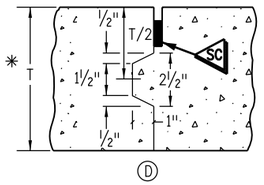
EXPANSION JOINT



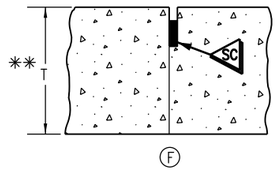
TRANSVERSE CONTRACTION JOINT
(TRANSVERSE WEAKENED PLANE JOINT)



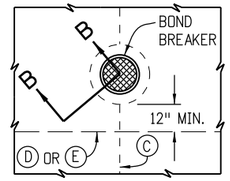
LONGITUDINAL CONTRACTION JOINT
(LONGITUDINAL WEAKENED PLANE JOINT)

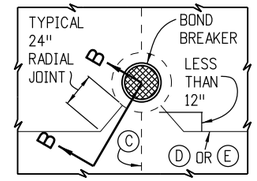


LONGITUDINAL CONSTRUCTION JOINT
* USE ONLY IF T ≥ 8 IN.
FORM ONLY FEMALE KEYWAY

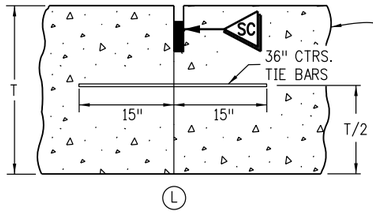


LONGITUDINAL CONSTRUCTION JOINT
** USE ONLY IF T < 8 IN.



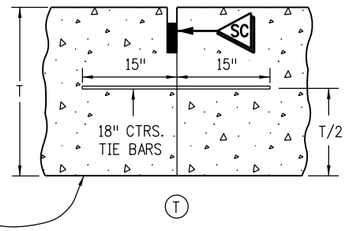


INLET OR MANHOLE CAST IN PAVEMENT

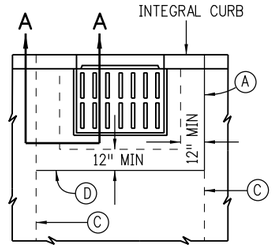


LONGITUDINAL CONSTRUCTION JOINT

A KEYWAY IS ALLOWED TO FACILITATE USE OF BENT TIE BARS OR APPROVED TWO PIECE CONNECTORS

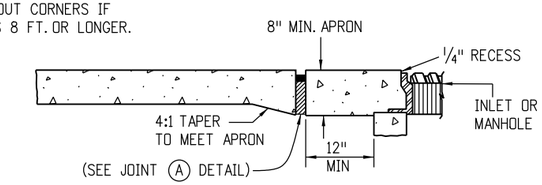


TRANSVERSE CONSTRUCTION JOINT

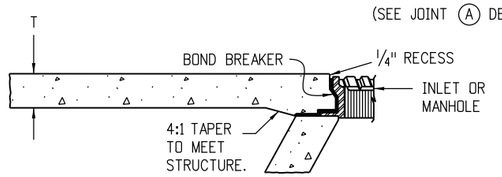


CURB INLET BOXOUT

INSTALL TRANSVERSE JOINT AT BOTH BOXOUT CORNERS IF BOXOUT IS 8 FT. OR LONGER.

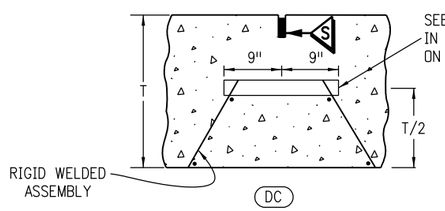


SECTION A-A

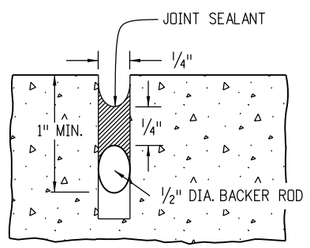


SECTION B-B

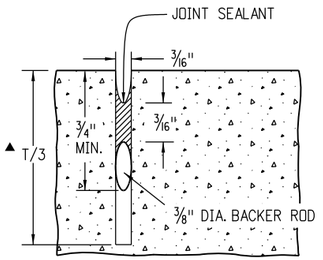
BOND BREAKER SHALL BE COMPOSED OF PLASTIC SHEET, BUILDING PAPER OR OTHER APPROVED MATERIAL THAT PREVENTS BONDING.



DOWELED TRANSVERSE CONTRACTION JOINT



SEAL AT CONSTRUCTION JOINT SC



▲ SHALL BE 0.4T FOR LONGITUDINAL JOINTS ALONG SLABS 14 FT. IN WIDTH.

SAWED JOINT S

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: DD		Date:	Comments
Last Modification Date: 07/24/12 Initials: LTA	R-X	07/24/12	Changed Tie Bar spacing from 30" to 36".
Full Path: www.coloradodot.info/business/designsupport	R-X		Modified the Reinforcing Size Table.
Drawing File Name: 412010505.dgn	R-X		
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CONCRETE PAVEMENT JOINTS

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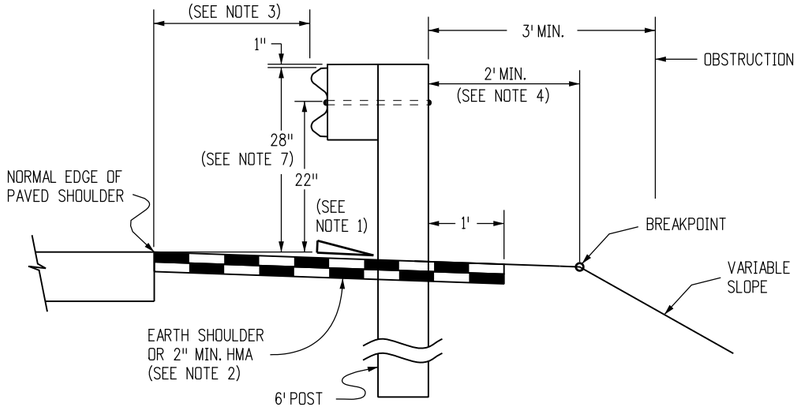
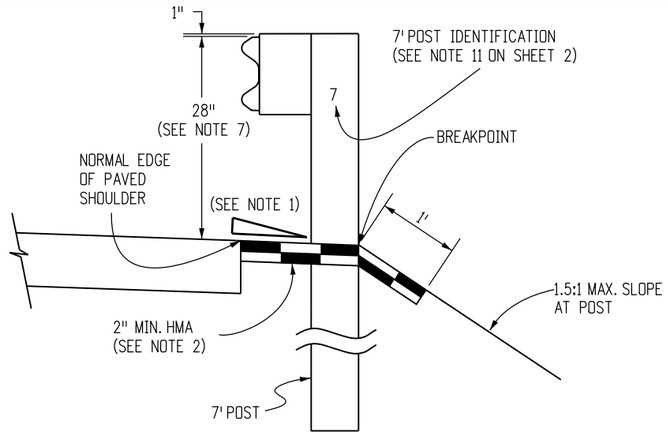
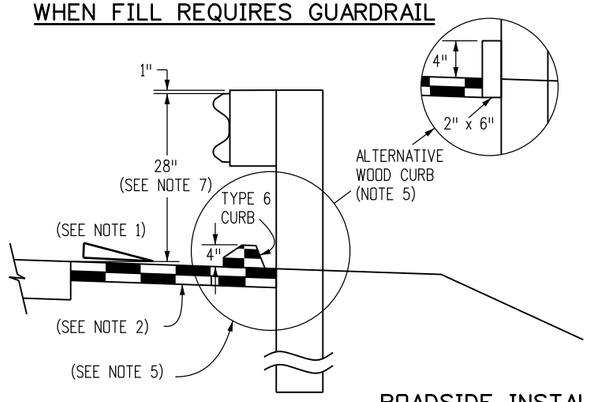


NORMAL ROADSIDE INSTALLATION WHEN FILL REQUIRES GUARDRAIL

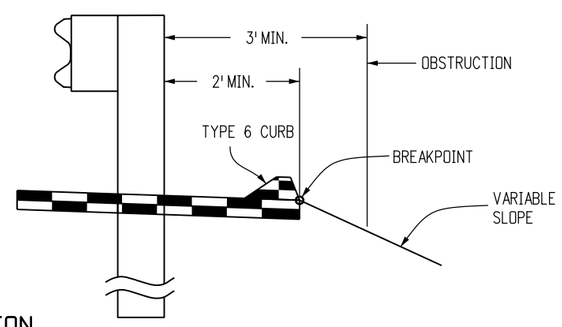


RESTRICTIVE ROADSIDE INSTALLATION WITH 7 FOOT GUARDRAIL POSTS

(SEE NOTE 4)

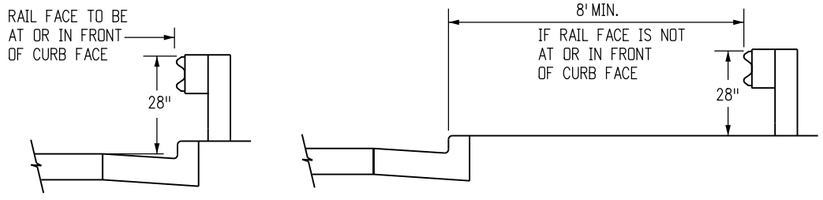


OPTION A



OPTION B

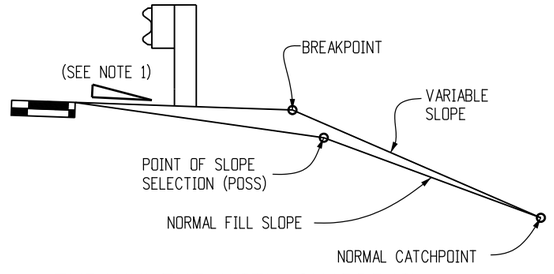
ROADSIDE INSTALLATION WITH EROSION CONTROL CURB



URBAN ROADSIDE INSTALLATION WITH CURB AND GUTTER

LOCATION	SPACING
ALL LOCATIONS EXCEPT BRIDGE RAIL LOCATIONS	6'-3"
BRIDGE OR STRUCTURE APPROACH	SEE SHEETS 12 & 20

NORMAL CENTER-TO-CENTER POST SPACING



EMBANKMENT WITH GUARDRAIL

(NOTE: THE CATCHPOINT REMAINS THE SAME AS THAT FOR "NORMAL" FILL SLOPE. FOR THE WIDER "Z" DISTANCES, THE VARIABLE SLOPE MAY "CATCH" AT THE POSS.)

GENERAL NOTES

1. RATE OF SLOPE DEPENDS ON GUARDRAIL LOCATION:
   A. FOR GUARDRAIL FACE 2 FT. OR LESS FROM THE NORMAL EDGE OF PAVED SHOULDER, CONTINUE THE RATE OF SLOPE OF THE NORMAL PAVED SHOULDER TO THE BREAKPOINT.
   B. FOR GUARDRAIL FACE MORE THAN 2 FT. FROM THE NORMAL EDGE OF THE PAVED SHOULDER, THE SLOPE SHALL BE 10:1 OR FLATTER.
2. WHEN SPECIFIED ON THE PLANS, EXTEND A 2 IN. MINIMUM THICKNESS PAVED SURFACE TO 1 FT. BEHIND THE GUARDRAIL POSTS OR TO THE EROSION CONTROL CURB AS SHOWN ON PLANS. ASPHALT CUTTING & PATCHING OR OTHER APPROVED METHOD SHALL BE USED TO MINIMIZE DAMAGE TO ALL PAVED SURFACES UNDER GUARDRAIL INSTALLATIONS. ALL REPAIRS TO THE PAVED AREA WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK. A MINIMUM 3 IN. THICK FIBER REINFORCED CONCRETE PAVEMENT MAY ALSO BE USED FOR PAVING BENEATH THE GUARDRAIL. INSTALL THE POST IN A $\frac{1}{2}$ IN. OVERSIZED FORMED HOLE FOR GUARDRAIL RUNS AND TERMINALS AS DIRECTED. PAYMENT FOR THIS PAVED SURFACE WILL BE MADE UNDER A PAVEMENT OR CONCRETE PAY ITEM WITH QUANTITIES SHOWN ON THE PLANS.
3. THE MINIMUM GUARDRAIL OFFSET FROM PAVED SHOULDER EDGE SHALL BE:
   0 FT. FOR SHOULDERS 8 FT. OR WIDER
   2 FT. FOR SHOULDERS 6 FT. OR LESS

   THE GUARDRAIL OFFSET FROM PAVED INSIDE SHOULDER EDGE OF A DIVIDED HIGHWAY SHALL BE;
   0 FT. MINIMUM FOR SHOULDERS 6 FT. OR WIDER
   2 FT. DESIRABLE FOR 4 FT. SHOULDERS

   THE ABOVE 2 FT. GUARDRAIL TO SHOULDER OFFSET IS DESIRABLE BUT NOT REQUIRED FOR:
   A. FOR AN EXISTING HIGHWAY WITH A DESIGN SPEED LESS THAN 50 MPH, THE MINIMUM OFFSET IS 4 FT. FROM THE TRAVELED WAY.
   B. FOR A ONE-WAY ONE-LANE RAMP, AND WHERE ONE OR MORE OF THE FOLLOWING ARE TRUE:
      (1) THE NON-OFFSET GUARDRAIL BEGINS AT LEAST 100 FT. BEYOND RAMP NOSE.
      (2) THE NON-OFFSET GUARDRAIL IS NOT LOCATED ON THE RAMP EXIT OR ENTRANCE CURVE CONNECTION TO THE MAJOR HIGHWAY.
      (3) THE RAMP SHOULDERS ARE 4 FT. OR WIDER.

   USE OF GREATER THAN MINIMUM OFFSET DIMENSIONS IS ENCOURAGED TO MEET THE DESIRABLE GOAL OF PLACING THE GUARDRAIL AS FAR AS POSSIBLE FROM THE TRAVEL WAY, EVEN FOR SHORT DISTANCES, WHILE PROVIDING A SMOOTH CHANGE IN GUARDRAIL ALIGNMENT.
4. IF 2 FT. CANNOT BE PROVIDED BETWEEN THE BACK OF THE GUARDRAIL POST AND THE BREAKPOINT, USE 7 FT. GUARDRAIL POSTS. REFER TO THE "RESTRICTIVE ROADSIDE INSTALLATION" DETAIL.
5. WHEN SPECIFIED ON THE PLANS, INSTALL 4 IN. HIGH TYPE 6 CURB WITH ITS FACE AT OR BEHIND THE RAIL FACE. AS AN ALTERNATIVE WHEN SPECIFIED ON THE PLANS, INSTALL A 2 IN. x 6 IN. TREATED (AASHTO M 133) WOOD CURB. FASTEN WITH A 4 IN. LAG BOLT AND WASHER AT EACH WOOD POST, OR WITH A $\frac{1}{4}$ IN. DIA. BOLT WITH WASHER AND NUT AT EACH STEEL POST. IF THE 2 IN. x 6 IN. WOOD CURB IS SPECIFIED, IT WILL BE INCLUDED IN THE COST OF THE GUARDRAIL. IF APPROVED BY THE ENGINEER, A 2 IN. x 4 IN. TREATED WOOD CURB MAY BE SUBSTITUTED FOR THE 2 IN. x 6 IN. CURB AND SET ON TOP OF PAVEMENT SURFACE AND ATTACHED AS DESCRIBED ABOVE. NO SPLICING SHALL BE ALLOWED IN WOOD CURBS. ADJACENT BOARDS SHALL BE BUTTED TOGETHER AND BOLTED AT A POST LOCATION. JOINTS SHALL BE LOCATED AT THE POSTS.
6. SEE SHEET 7 FOR CURB TREATMENTS AT GUARDRAIL TERMINALS.
7. RESET GUARDRAIL IF THIS DIMENSION WILL BE LESS THAN 25 IN.
8. ALL W-BEAM SPLICES, AND SPLICES OF TERMINAL CONNECTORS TO W-BEAM SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC UNLESS OTHERWISE NOTED.
9. MATERIAL TYPE AND SHAPE OF POSTS AND BLOCKS SHALL BE THE SAME THROUGHOUT THE PROJECT EXCEPT WHEN SPECIFIC POSTS AND BLOCKS ARE SPECIFIED, i.e. AT END ANCHORAGES AND BOX CULVERTS.
10. CONCRETE MAY BE READY-MIXED OR FIELD-MIXED AND SHALL CONSIST OF A MINIMUM OF 1 PART CEMENT TO 6 PARTS AGGREGATE BY VOLUME.

THE GENERAL NOTES ARE CONTINUED ON SHEET 2.

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Creation Date: 07/04/12 Initials: DLM		Date:	Comments
Last Modification Date: 10/27/14 Initials: LTA	(R-X)	10/09/14	Added details of the X-Lite flared and non-flared end terminals to sheets 6 and 8.
Full Path: www.coloradodot.info/business/designsupport	(R-X)	10/27/14	Removed the Et-Plus End Anchorage (non-flared) from sheet 8.
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GUARDRAIL TYPE 3 W-BEAM

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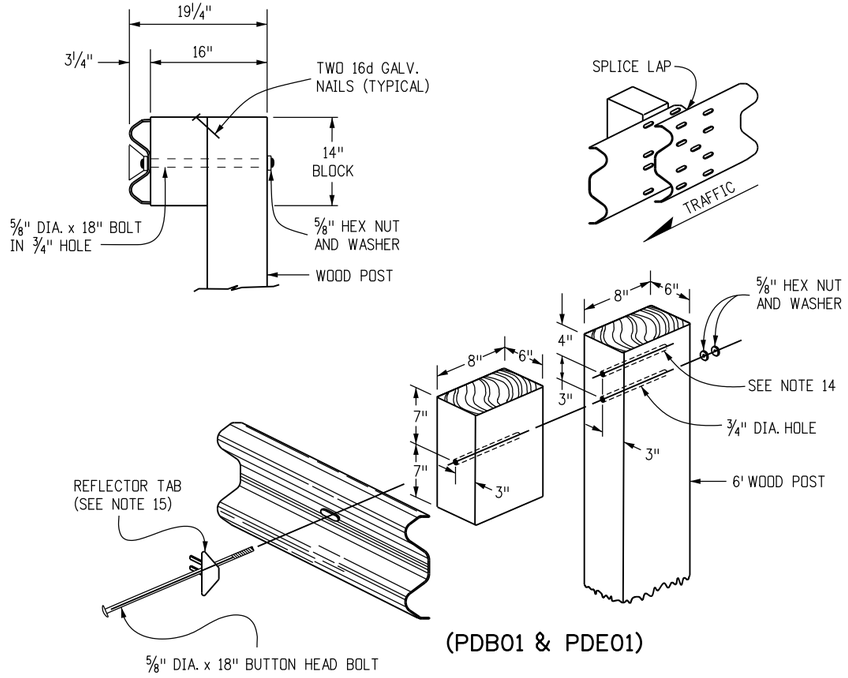
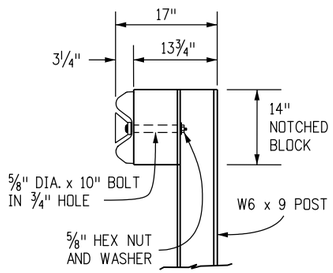
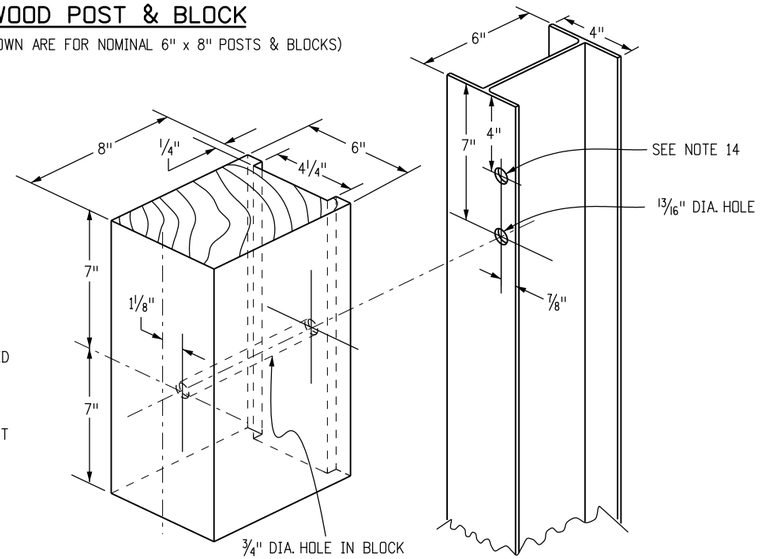


(PDB01 & PDE01)

WOOD POST & BLOCK

(DIMENSIONS SHOWN ARE FOR NOMINAL 6" x 8" POSTS & BLOCKS)





STEEL POST & NOTCHED BLOCK

(NOMINAL DIMENSIONS ARE SHOWN FOR THE POSTS & BLOCKS)

(PWE01)

GENERAL NOTES (CONTINUED FROM SHEET 1)

11. WHEN SPECIFIED IN THE CONTRACT, 7 FT. POSTS SHALL BE INSTALLED INSTEAD OF THE STANDARD 6 FT. POSTS. THE 7 FT. POSTS SHALL BE MARKED WITH THE NUMBER 7 TO ENSURE PERMANENT INDENTIFICATION. STEEL POSTS SHALL BE STAMPED PRIOR TO GALVANIZING. THE NUMBER 7 SHALL BE A MINIMUM 2 IN. TALL AND LOCATED AS SHOWN ON THE ELEVATION VIEW ON SHEET 1.

12. THE STANDARD 3 IN. X 1¾ IN. X 3⁄16 IN. RECTANGULAR WASHER USED UNDER POST BOLT HEADS IN THE PAST MAY REMAIN IN EXISTING INSTALLATIONS BUT SHALL NOT BE USED IN NEW CONSTRUCTION, REPAIRS, OR RESETTING OF RAIL, EXCEPT WHEN SPECIFICALLY IDENTIFIED ON THE STANDARD PLAN.

13. STANDARD GALVANIZED ROUND STEEL WASHERS SHALL BE USED UNDER ALL NUTS IN CONTACT WITH WOOD POSTS.

14. AN ADDITIONAL HOLE SHALL BE PROVIDED IN THE POSTS TO FACILITATE FUTURE RAISING OF THE RAIL ELEMENTS AND BLOCKS FOR OVERLAYS.

15. RETROREFLECTOR TABS SHALL BE INSTALLED AT 25 FT. INTERVALS (SEE SHEETS 6 AND 8 FOR EXCEPTIONS). RETROREFLECTOR TABS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK. THE TABS SHALL BE MOUNTED SO THE BOLT SLOT FACES AWAY FROM TRAFFIC, AND THE RETROREFLECTOR SURFACE FACES THE APPROACHING TRAFFIC FOR ONE-WAY ROADS. FOR TWO-WAY ROADS, BOTH SIDES OF THE TABS SHALL BE RETROREFLECTIVE, SO THAT DELINEATION IS PROVIDED FOR BOTH DIRECTIONS OF TRAVEL. THE RETROREFLECTIVE SHEETING COLOR SHALL MATCH THE COLOR OF THE ADJACENT TRAVEL WAY EDGE LINE. SEE THE RETROREFLECTOR TAB DETAIL ON SHEET 3.

16. AT THE TIME OF INSTALLATION, WOOD POSTS OR BLOCKS WITH SEASONING CHECKS GREATER THAN ¼ IN. SHALL NOT BE USED WHEN THE CHECK EXTENDS THE FULL LENGTH OF THE PIECE.

17. WOOD BLOCKS SHALL BE CUT FROM THE SAME CROSS-SECTION, SPECIES, AND GRADE, AND SHALL RECEIVE THE SAME PRESERVATIVE TREATMENT AS THE POSTS WHEN WOOD POSTS ARE USED.

18. REFERENCES SUCH AS 00PDB01", 00PDE01", AND 00PWE01" IN THIS STANDARD PLAN SPECIFY HARDWARE DETAILS FROM 00A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE" PREPARED BY THE AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.

19. NOTCHED RAIL BLOCKS MANUFACTURED FROM SYNTHETIC MATERIAL WILL BE ACCEPTED AS ALTERNATIVES TO WOOD NOTCHED BLOCKS FOR USE WITH STEEL POSTS PROVIDED THAT THE BLOCKS HAVE RECEIVED FHWA APPROVAL AND ARE CERTIFIED AS IDENTICAL TO THE SPECIMENS USED FOR TESTING AND APPROVAL.

20. WOOD POSTS SHALL BE MADE OF TIMBER WITH AN EXTREME FIBER STRESS IN BENDING OF 1200 PSI STRESS GRADING AND POST DIMENSIONS SHALL CONFORM WITH THE RULES OF THE WEST COAST INSPECTION BUREAU, OR THE SOUTHERN PINE BUREAU, OR THE WESTERN WOOD PRODUCTS ASSOCIATION. TIMBER FOR POSTS SHALL BE EITHER ROUGH SAWN (UNPLANED) OR S4S (SURFACED FOUR SIDES) WITH NOMINAL DIMENSIONS INDICATED. ONLY ONE TYPE OF SURFACE FINISH SHALL BE USED FOR POSTS AND BLOCKS IN ANY ONE CONTINUOUS LENGTH OF GUARDRAIL.

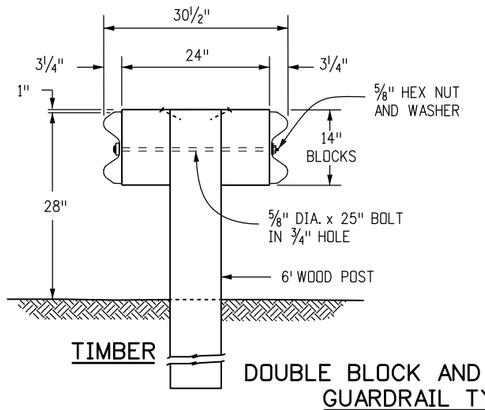
21. GLULAM POSTS AND BLOCKS WILL BE ACCEPTED AS ALTERNATIVES PROVIDED THAT THE SUPPLIED MATERIALS HAVE RECEIVED FHWA APPROVAL AND ARE CERTIFIED AS IDENTICAL TO THE SPECIMENS USED FOR TESTING AND APPROVAL.

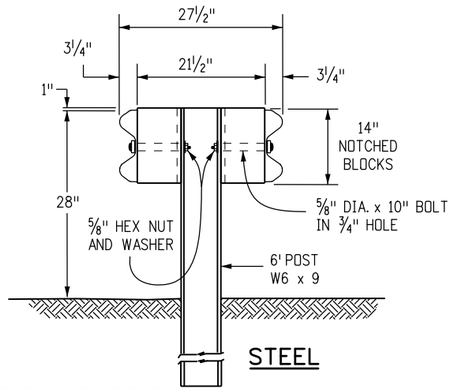
22. PRESSURE TREATMENT OF POSTS AND BLOCKS SHALL CONFORM TO AASHTO M 133 EXCEPT THAT BLOCKS NEED NOT BE INCISED. PRESERVATION ASSAY RETENTION REPORTS SHALL BE SUBMITTED TO THE ENGINEER. THE CONTRACTOR SHALL CERTIFY THAT THE SPECIES AND GRADE MEET THE REQUIREMENTS OF THE CONTRACT.

23. W-BEAM AND THRIE-BEAM GUARDRAIL POSTS SHALL BE MANUFACTURED USING AASHTO M 270 (ASTM A 709) GRADE 36 STEEL UNLESS CORROSION RESISTANT STEEL IS REQUIRED, IN WHICH CASE THE POST SHALL BE MANUFACTURED FROM AASHTO M 270 (ASTM A 709) GRADE 50W STEEL. THE DIMENSIONS OF THE CROSS-SECTION SHALL CONFORM TO A W6 X 9 SECTION AS DEFINED IN AASHTO M 160 (ASTM A 6). W6 X 8.5 WIDE FLANGE STEEL POSTS ARE AN ACCEPTABLE ALTERNATIVE TO THE W6 X 9.

24. AFTER THE SECTION IS CUT AND ALL HOLES ARE DRILLED OR PUNCHED THE COMPONENT SHALL BE ZINC-COATED CONFORMING TO AASHTO M 111 (ASTM A 123) UNLESS CORROSION-RESISTANT STEEL IS USED. WHEN CORROSION-RESISTANT STEEL IS USED THE PORTION OF THE POST TO BE EMBEDDED IN SOIL SHALL BE ZINC-COATED CONFORMING TO AASHTO M 111 (ASTM A 123) AND THE PORTION ABOVE THE SOIL SHALL NOT BE ZINC-COATED, PAINTED OR OTHERWISE TREATED.

25. FIELD MODIFICATION TO RAIL ELEMENTS ONLY IS ALLOWED BY SAWING AND DRILLING OF HOLES. FLAME CUTTING IS NOT PERMITTED. POSTS SHALL NOT BE MODIFIED. COMPONENTS ON WHICH THE SPELTER COATING HAS BEEN DAMAGED SHALL BE EITHER REGALVANIZED OR RECOATED IN CONFORMANCE WITH AASHTO M 36, OR PAINTED WITH ONE FULL BRUSH COAT OF ZINC RICH PAINT CONFORMING TO MILITARY SPECIFICATION DOD-P-21035A.





DOUBLE BLOCK AND RAIL MEDIAN BARRIER
GUARDRAIL TYPE 3 (DOUBLE)

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GUARDRAIL TYPE 3 W-BEAM

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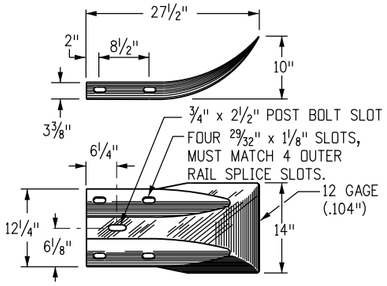
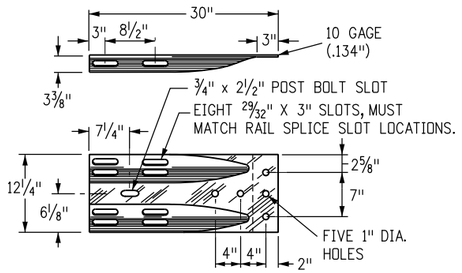
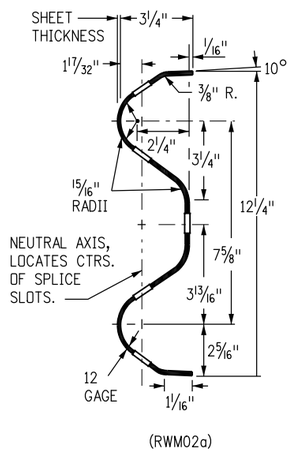


(RWE01a)

TERMINAL SECTION (FLARED)



TERMINAL SECTION (CONNECTOR)



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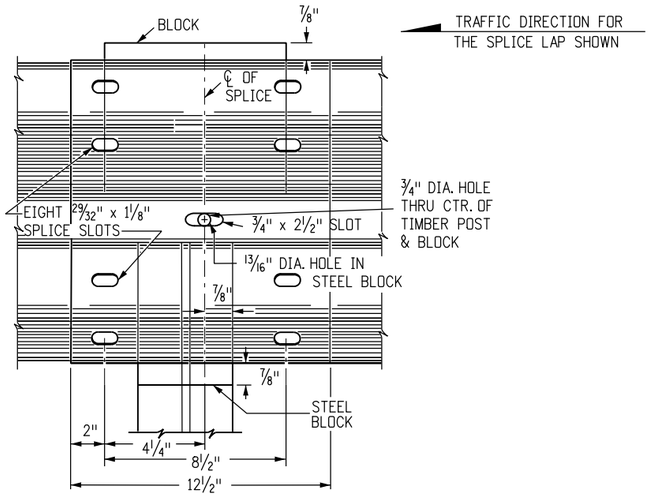
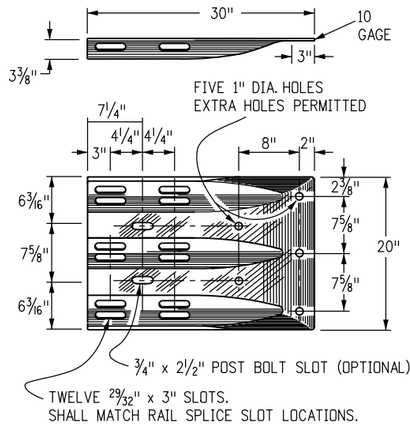
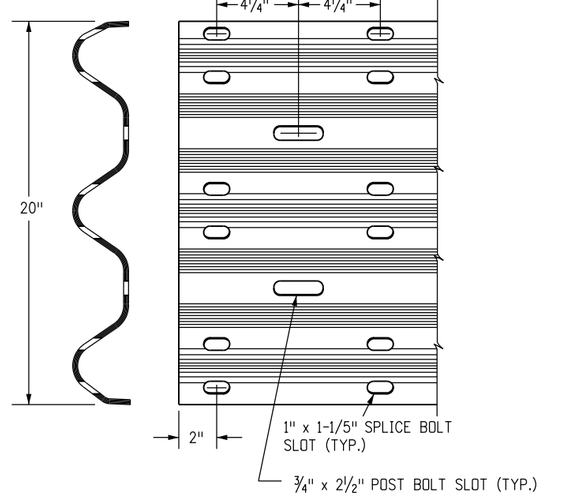
W-BEAM RAIL SECTION



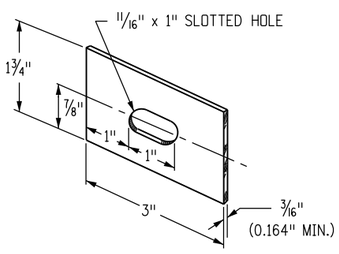
RAIL SPLICE



THRIE BEAM TERMINAL SECTION (CONNECTOR)



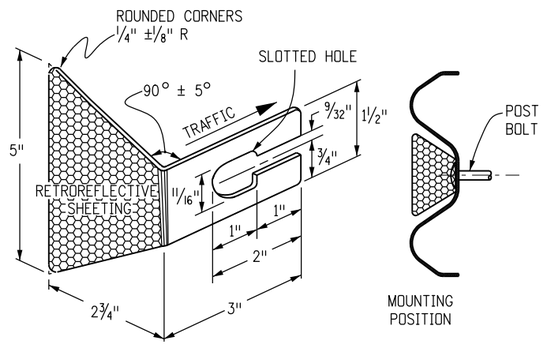
THRIE BEAM DETAIL



(FWR03)

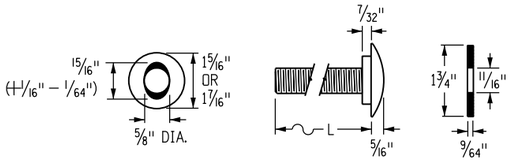
RECTANGULAR WASHER

(TO BE USED ONLY WHERE SPECIFIED.)



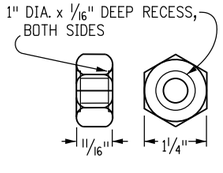
RETROREFLECTOR TAB

RETROREFLECTOR TABS SHALL BE MANUFACTURED FROM 12 TO 14 GAUGE STEEL. RETROREFLECTIVE SHEETING SHALL CONFORM TO ASTM D4956 TYPE III. SEE NOTE 7 ON SHEET 6.



BUTTON HEAD BOLT WITH OVAL SHOULDER

WASHER



HEX NUT

PART	MATERIAL SPEC.	GALVANIZING SPEC.	CORROSION-RESISTANT SPEC.
W-BEAM RAIL & TERMINAL SECTIONS	AASHTO M 180, CLASS A OR B	AASHTO M 180, TYPE 1 OR 2	AASHTO M 180, TYPE 4
BASE PLATE	ASTM A 36	AASHTO M 111	N.A.
NUTS, BOLTS & STUDS FOR GENERAL USE	ASTM A 307	AASHTO M 232, CLASS C OR ASTM B 695 CLASS 50 TYPE 1	
HIGH STRENGTH BOLTS & NUTS	ASTM A 325		
HIGH STRENGTH STUDS & NUTS	ASTM A 449		
ROUND STEEL WASHERS	ASTM F 436		
RECTANGULAR WASHERS	AASHTO M 180		
OTHER FITTINGS	ASTM A 36	AASHTO M 111	

THE TABULATION OF GUARDRAIL WILL SPECIFY THE TYPE OF CORROSION PROTECTION: GALVANIZED OR CORROSION - RESISTANT STEEL.

STEEL POSTS SHALL HAVE THE SAME CORROSION PROTECTION AS SPECIFIED FOR THE METAL BEAM RAIL. PUNCHING, DRILLING, CUTTING, OR WELDING OF POSTS WILL NOT BE PERMITTED AFTER GALVANIZING.

DIAMETER & TYPE (INCHES)	LENGTH L (INCHES)	THREAD LENGTH (INCHES)	INTENDED USE	AASHTO-AGC-ARTBA STANDARD NUMBER	NO. BOLTS, NUTS & WASHERS
⅝ BUTTON HEAD	1¼	FULL (1 1/32)	ALL RAIL SPLICES	FBB01	8 PER SPLICE*
OVAL	18	MIN. 2½	SINGLE BLOCK & POST (TIMBER)	FBB04	1 PER POST
SHLDR.	25	MIN. 2	DOUBLE BLOCK & POST (TIMBER)	FBB05	1 PER POST
	10	MIN. 2	FASTEN NOTCHED BLOCK TO STEEL POST	FBB03	1 PER BLOCK

* WASHERS NOT USED AT RAIL SPLICES

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Sheet Revisions	
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GUARDRAIL TYPE 3 W-BEAM

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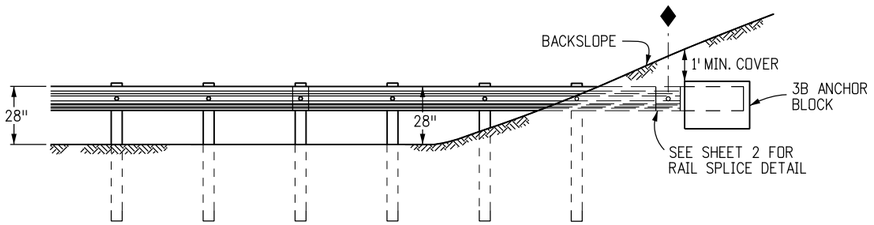
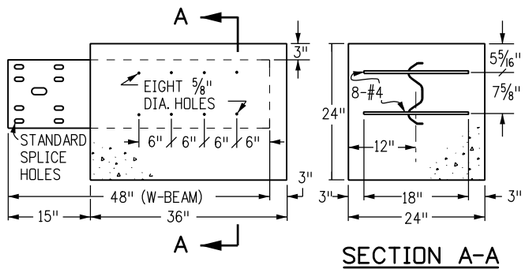
STANDARD PLAN NO.

M-606-1



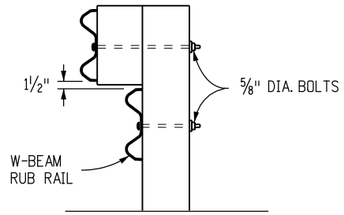
SEE TYPE 3B (RUB RAIL) PLAN VIEW FOR ALIGNMENT. THE 100 FT. FLARE LENGTH MAY BE SHORTENED IF THE SLOPE IS LESS THAN 8 FT. WIDE.

END ANCHORAGE TYPE 3B
(WITHOUT ROADSIDE DITCH AT GUARDRAIL)



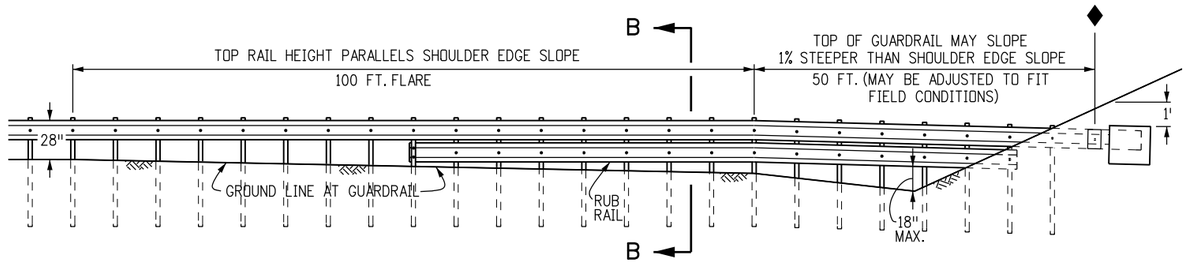
SECTION A-A

TYPE 3B ANCHOR BLOCK DETAIL

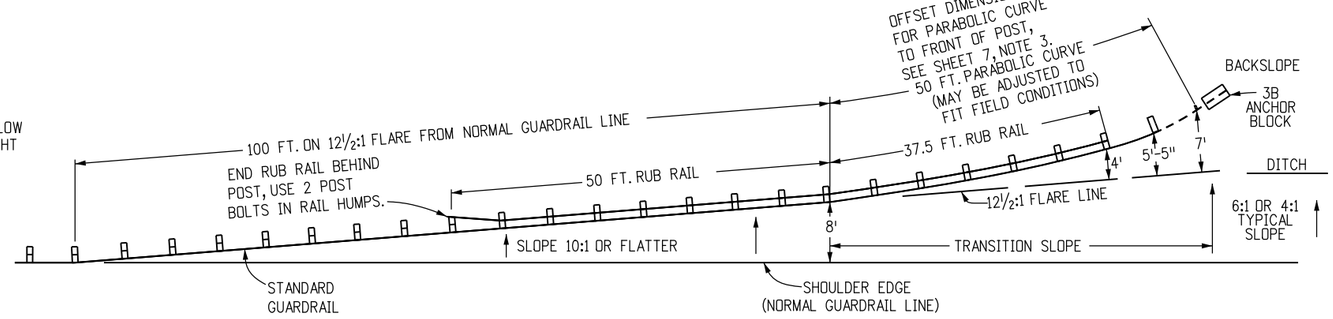


SECTION B-B

MOUNT A W-BEAM RUB RAIL 1-1/2 IN. BELOW THE TOP RAIL WHEN THE TOP RAIL HEIGHT EXCEEDS 30 IN. ABOVE THE GROUND



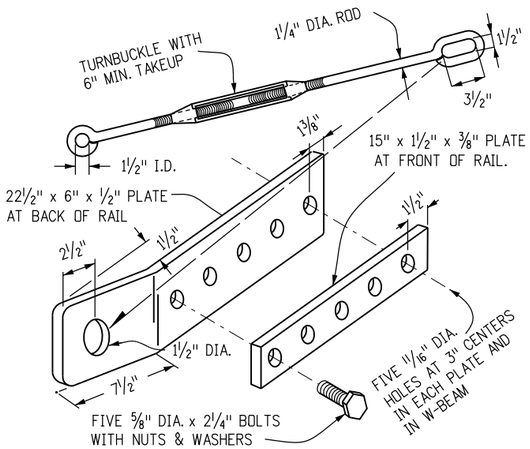
ELEVATION VIEW



PLAN VIEW

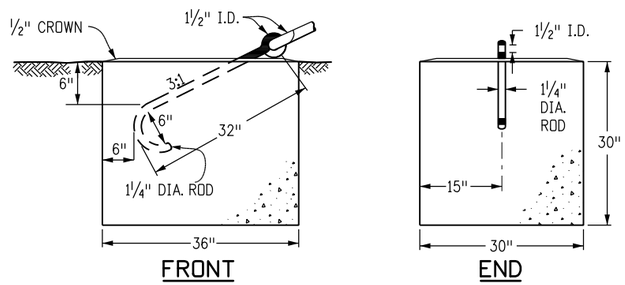
◆ END OF GUARDRAIL PAY LENGTH

END ANCHORAGE TYPE 3B (RUB RAIL)
(WITH ROADSIDE DITCH AT GUARDRAIL)



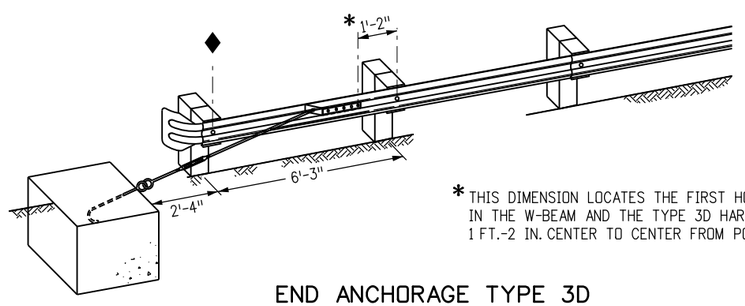
TYPE 3D HARDWARE DETAILS

NOTE: ALL PARTS SHALL BE GALVANIZED



FRONT END

TYPE 3D ANCHOR BLOCK DETAIL



* THIS DIMENSION LOCATES THE FIRST HOLE IN THE W-BEAM AND THE TYPE 3D HARDWARE. 1 FT.-2 IN. CENTER TO CENTER FROM POST BOLT HOLE.

END ANCHORAGE TYPE 3D DEPARTURE TERMINAL

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: DLM		Date:	Comments
Last Modification Date: 10/09/14 Initials: LTA	(R-X)		
Full Path: www.coloradodot.info/business/designsupport	(R-X)		
Drawing File Name: 6060104020.dgn	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

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GUARDRAIL TYPE 3 W-BEAM

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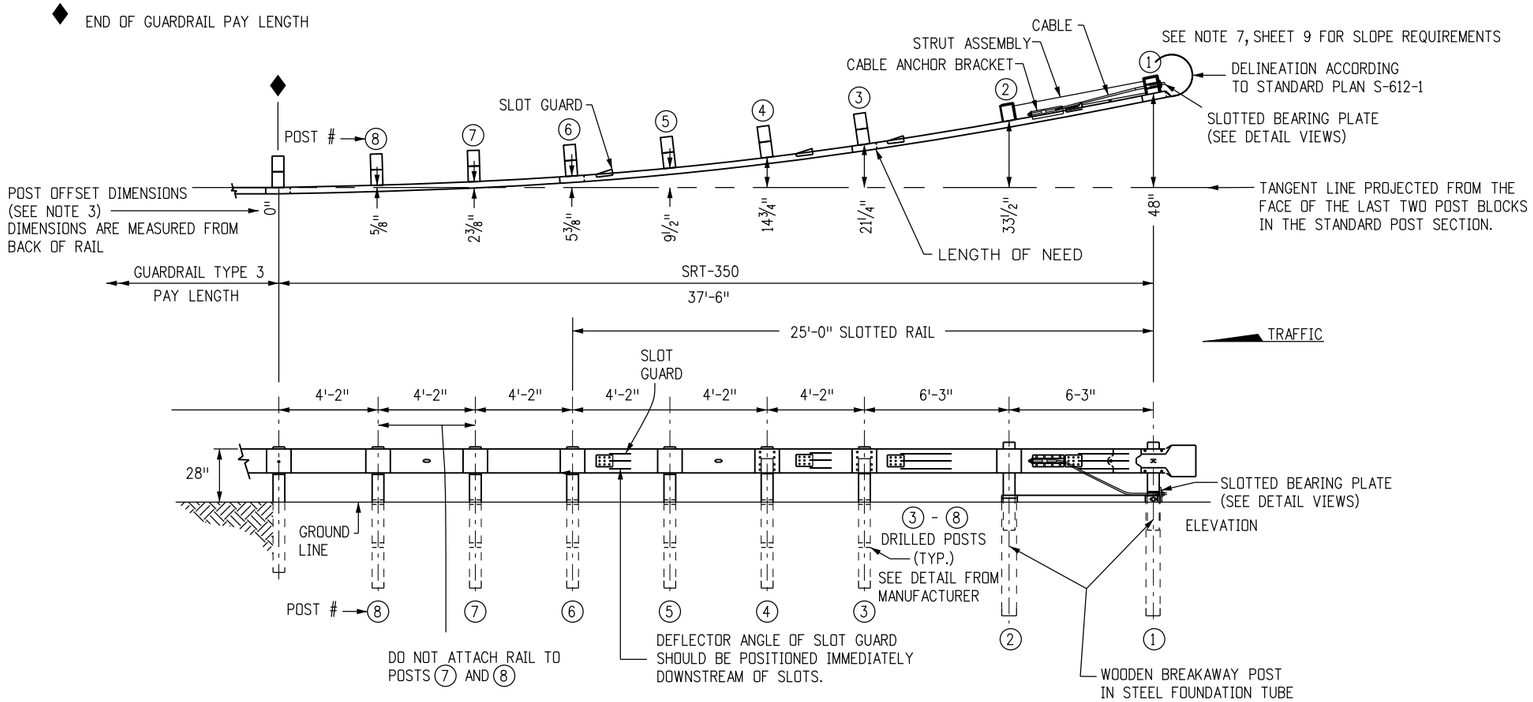
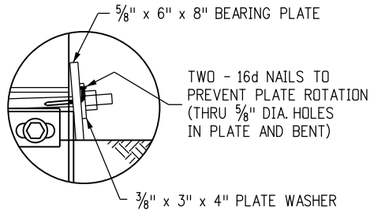
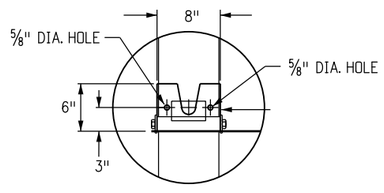


SLOTTED RAIL TERMINAL (SRT)



SRT DETAIL VIEW



PLACE SLOTTED BEARING PLATE WITH SLOT ORIENTED UP AS SHOWN.

SRT FRONT VIEW

SLOTTED BEARING PLATE DETAIL

NOTES FOR FLARED

1. THE END ANCHORAGE (FLARED) SHALL EITHER BE THE SLOTTED RAIL TERMINAL (SRT-350), AS MANUFACTURED BY TRINITY INDUSTRIES, INC. (TELEPHONE #: 800-772-7976), THE FLEAT-350, AS MANUFACTURED BY ROAD SYSTEMS INC. (TELEPHONE #: 432-263-2435), OR THE X-LITE AS MANUFACTURED BY BARRIER SYSTEMS, INC. (TELEPHONE #: 888-800-3691). ONE END ANCHORAGE (FLARED) SHALL INCLUDE ALL POST, RAIL, AND ALL HARDWARE ITEMS REQUIRED FOR A COMPLETE UNIT. THE END ANCHORAGE (FLARES) SHALL BE INSTALLED CONFORMING TO THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL PROVIDE A COPY OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PARTS LIST TO THE ENGINEER PRIOR TO INSTALLATION OF THE DEVICE.
2. IN HEAVY SNOW LOCATIONS, TRIM POSTS 1 AND 2 FLUSH WITH RAIL TOP AND TREAT END WITH SEALANT, IN CONFORMANCE WITH AASHTO M 133.
3. THE POST OFFSET DIMENSIONS ARE GIVEN TO THE CENTER OF THE TRAFFIC FACE OF THE BLOCKOUTS FROM THE PROJECTED RAIL TANGENT LINE, EXCEPT AT THE FIRST TWO POSTS WHERE THE DIMENSION IS TO THE CENTER OF THE TRAFFIC FACE OF THE POST. OFFSET POINTS SHALL BE LOCATED BY CHORD MEASUREMENTS AT THE BACK OF THE RAIL AND BE EQUAL TO THE NOMINAL POST SPACINGS SHOWN. POSTS ARE TO BE SET APPROXIMATELY RADIAL TO THE RAILING AT EACH POST LOCATION.
4. THE SRT SLOTTED BEARING PLATE SHALL BE INSTALLED WITH THE SLOT FACING UP.
5. POSTS SHALL BE DRILLED FOR BREAKAWAY ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
6. SEE SHEETS 1, 3 AND 4 FOR STANDARD GUARDRAIL TYPE 3 AND INSTALLATION DETAILS.
7. RETROREFLECTOR TABS SHALL NOT BE USED ON POSTS 1 THROUGH 8.
8. SRT PANELS SHALL BE SUPPLIED IN EITHER THREE 12 FT. - 6 IN. RAIL PANELS, OR ONE 25 FT. - 0 IN. AND ONE 12 FT. - 6 IN. RAIL PANELS.
9. SRT - STRAIGHT FLARED OPTION. SEE MANUFACTURER'S DETAILS.
10. HINGED BREAK AWAY (HBA) STEEL POSTS MAY BE USED AS AN ALTERNATIVE ON THE SRT FOR POSTS 2 THRU 8. SEE MANUFACTURER'S DETAILS.
11. HINGED BREAK AWAY (HBA) STEEL POSTS OR WELDED POSTS (PW) MAY BE USED AS AN ALTERNATIVE ON THE FLEAT FOR POSTS 3 THRU 7. SEE MANUFACTURER'S DETAILS.
12. USE MANUFACTURE'S SUPPLIED POSTS FOR X-LITE END ANCHORAGE AS FOLLOWS:
    POST 1 - X-LITE, CRIMPED POST SLOTS, GALVANIZED.
    POST 2 - X-LITE, POST II, GALVANIZED.
    POSTS 3 THRU 6 - X-LITE, CRIMPED POST HOLES, GALVANIZED.
13. DELINEATION SHALL BE APPLIED TO THE END PIECE, AND SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

END ANCHORAGE (FLARED)

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: DLM		Date:	Comments
Last Modification Date: 10/09/14 Initials: LTA	(R-X)	10/09/14	Moved FLEAT 350 To Sheet 6.
Full Path: www.coloradodot.info/business/designsupport	(R-X)	10/09/14	Added Gen Note 12.
Drawing File Name: 6060105020.dgn	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

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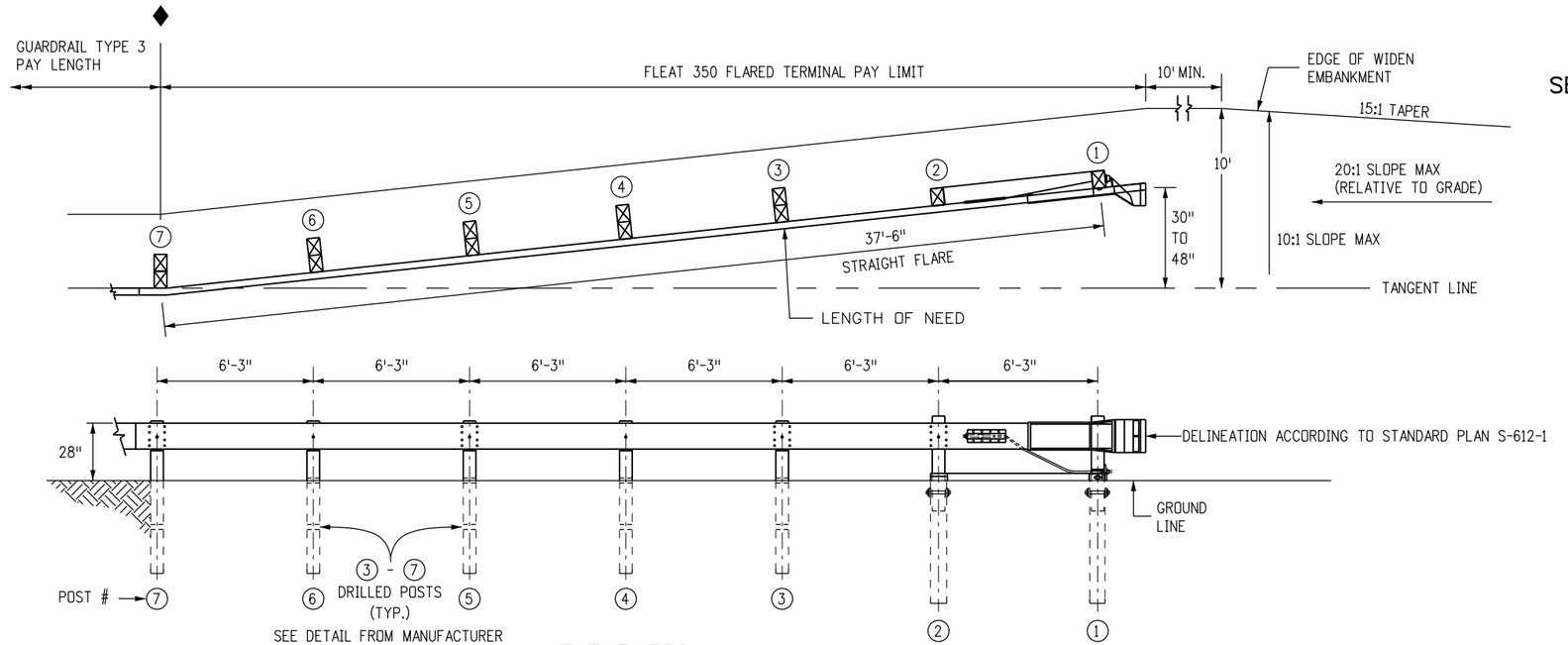
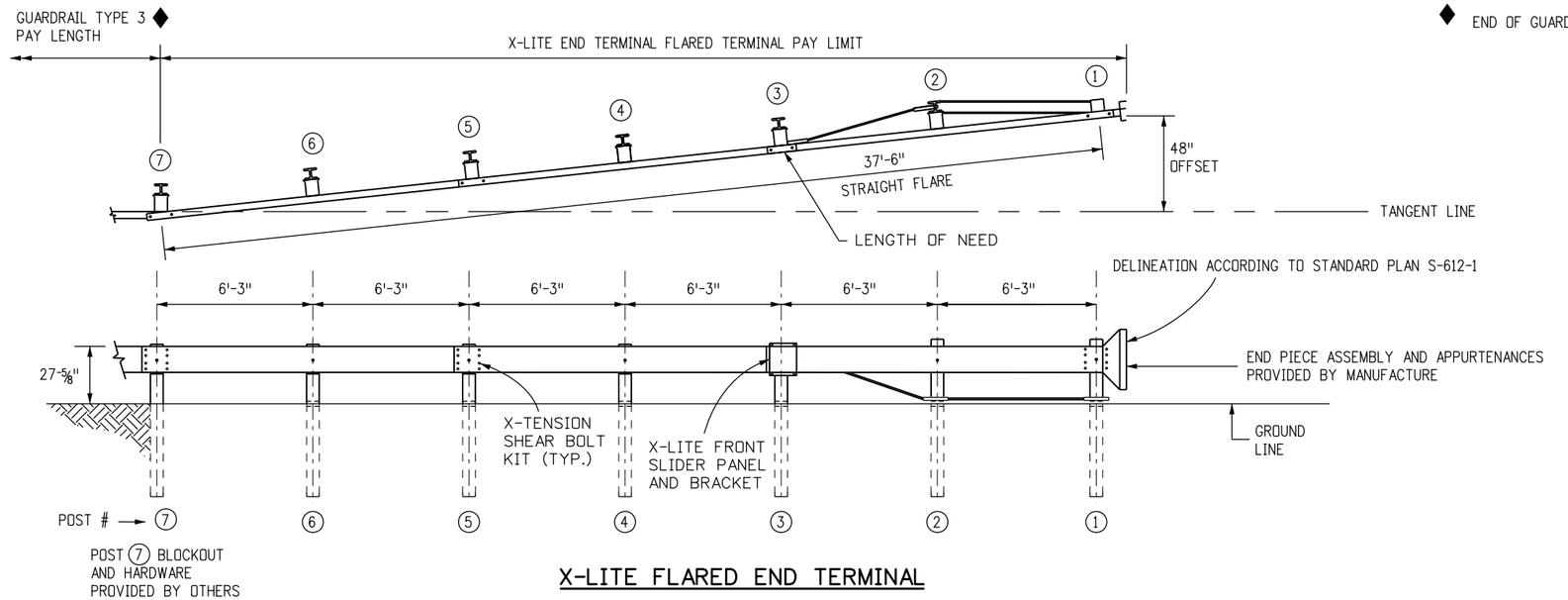


FLEAT 350



X-LITE FLARED END TERMINAL

SEE M-606-1, SHEET 5 OF 20, FOR "NOTES".

◆ END OF GUARDRAIL PAY LENGTH

END ANCHORAGES (FLARED)

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: DLM		Date:	Comments
Last Modification Date: 10/09/14 Initials: LTA	R-X	10/09/14	Added X-Lite End Terminal
Full Path: www.coloradodot.info/business/designsupport	R-X	10/09/14	Moved Notes to Sheet 5 of 20
Drawing File Name: 6060106020.dgn	R-X		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	R-X		

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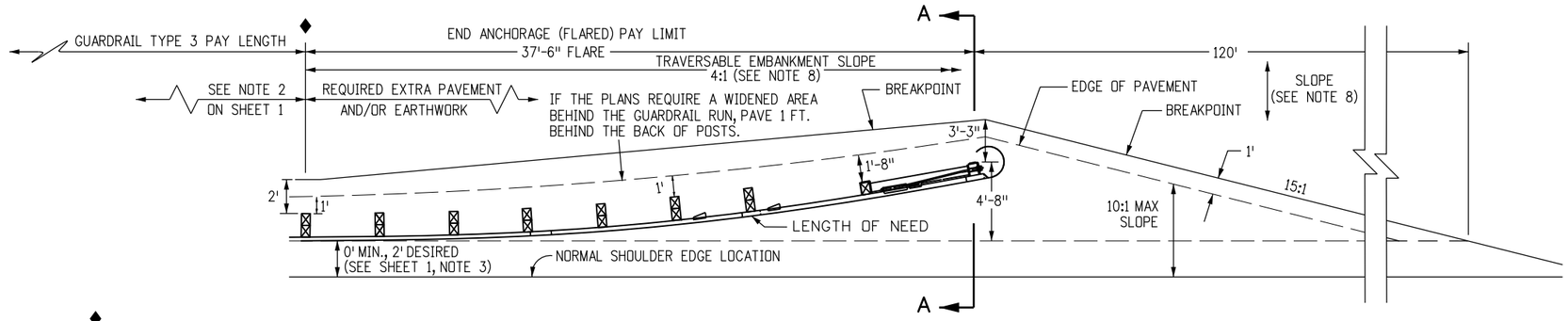
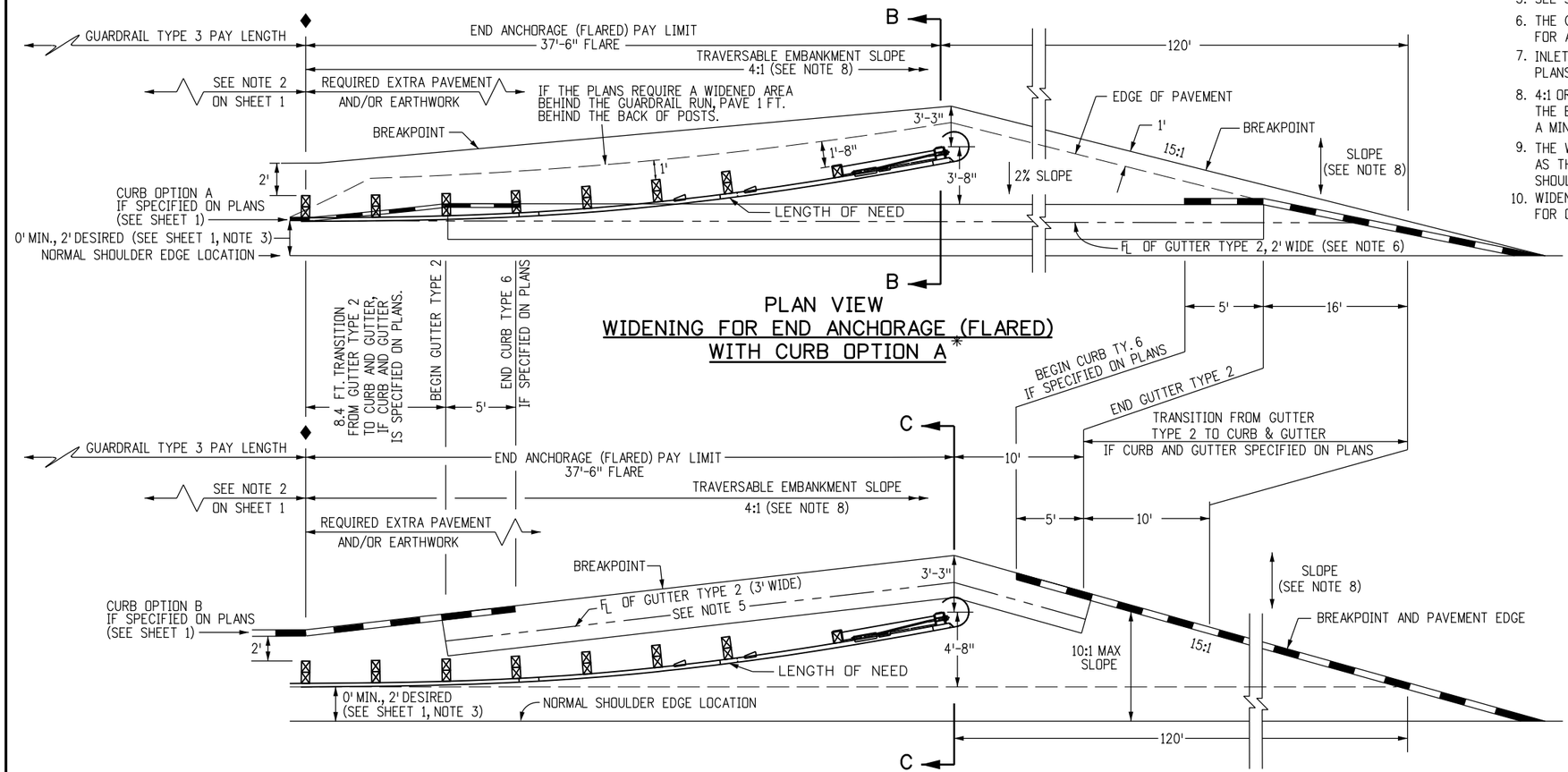
STANDARD PLAN NO.
M-606-1



◆ END OF GUARDRAIL PAY LENGTH

PLAN VIEW
WIDENING FOR END ANCHORAGE (FLARED) *

* THIS PLAN VIEW SHOWS ONLY THE SRT. THE FLEAT-350 USES THE SAME WIDENING DETAILS.

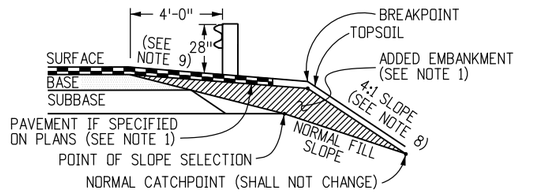


PLAN VIEW
WIDENING FOR END ANCHORAGE (FLARED) WITH CURB OPTION A *

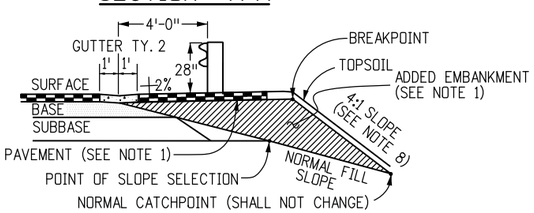
PLAN VIEW
WIDENING FOR END ANCHORAGE (FLARED) WITH CURB OPTION B *

NOTES

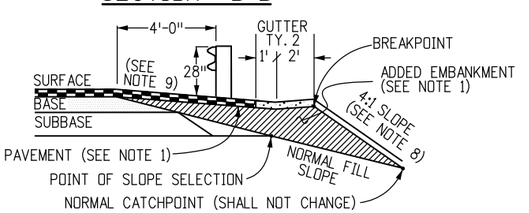
1. PAYMENT FOR THE ADDED EMBANKMENT (APPROXIMATELY 45 CU. YDS.) FOR THE FLARE SHALL BE AS FOLLOWS:
   A. UNDER PAY ITEM 203 WHEN THE CONTRACT PLAN INCLUDES PAY ITEM 203
   B. INCLUDED IN THE COST OF THE END ANCHORAGE (FLARED) WHEN THE CONTRACT PLANS DO NOT INCLUDE PAY ITEM 203. THE ADDED EMBANKMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUBSECTION 203.07, AASHTO T 99.
2. WHEN THE WIDENED AREA IS PAVED, PAYMENT FOR THE PAVEMENT (APPROX. 70 SQ. YDS.) SHALL BE AS FOLLOWS:
   A. UNDER PAY ITEM 403 OR 412 WHEN THE CONTRACT PLAN INCLUDES PAY ITEM 403 OR 412
   B. INCLUDED IN THE COST OF THE END ANCHORAGE (FLARED) WHEN THE CONTRACT PLAN DOES NOT INCLUDE PAY ITEM 403 OR 412 (SEE SHEET 1, NOTE 2 FOR PAVEMENT TYPES)
3. CONCRETE PAVED AREAS SHALL HAVE THEIR TAPERED ENDS SQUARED OFF AS DIRECTED BY THE ENGINEER.
4. WHEN OVERLAY PAVING, THE FINISHED SURFACE AT EACH POST SHALL NOT BE ABOVE THE TOP BREAKAWAY HOLE OR STRUT ASSEMBLY. THE WIDENED AREA AT THE FLARED END ANCHORAGE SHOULD NOT BE OVERLAYED UNLESS PAVEMENT CONDITIONS WARRANT IT BEING OVERLAYED. ANY OVERLAY PAVEMENT ABUTTING THE FLARED END ANCHORAGE SHALL BE TAPERED TO PREVENT A DROP IN THE PAVED SURFACE BELOW THE RAIL.
5. SEE SHEETS 1, 3 AND 4 FOR STANDARD TYPE 3 GUARDRAIL AND INSTALLATION DETAILS.
6. THE COST OF THE GUTTER WILL BE PAID FOR AS "GUTTER TYPE 2 (2 FT.)" FOR A LENGTH OF 134 FT. OR "GUTTER TY. 2 (3 FT.)" FOR A LENGTH OF 40 FT.
7. INLETS OR RUNDOWNS MAY BE USED INSTEAD OF THE GUTTER IF SPECIFIED ON THE PLANS. NO ADDITIONAL CURB SHALL BE ADDED IN THE VICINITY OF THE END ANCHORAGE.
8. 4:1 OR FLATTER SLOPES IN THE TRAVERSABLE AREA SHALL BE USED BEHIND THE END ANCHORAGE, AND IN ADVANCE OF POST (1). IF THIS IS NOT POSSIBLE, A MINIMUM 3:1 SLOPE MAY BE USED IF APPROVED BY THE ENGINEER.
9. THE WIDENED AREA, EXCEPT FOR CURB OPTION A, SHALL HAVE THE SAME GRADING AS THE ADJACENT GUARDRAIL: 10:1 OR FLATTER IF MORE THAN 2 FT. FROM SHOULDER OR SLOPE EQUAL TO ROADWAY SLOPE IF 2 FT. OR LESS FROM SHOULDER.
10. WIDENING FOR END ANCHORAGES SHALL BE PAVED ON INTERSTATES AND FREEWAYS. FOR OTHER HIGHWAYS, PAVING SHALL BE AS SHOWN ON THE PLANS.



SECTION A-A



SECTION B-B



SECTION C-C

Computer File Information		Sheet Revisions	
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Last Modification Date: 10/09/14 Initials: LTA	(R-X)		
Full Path: www.coloradodot.info/business/designsupport	(R-X)		
Drawing File Name: 6060107020.dgn	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

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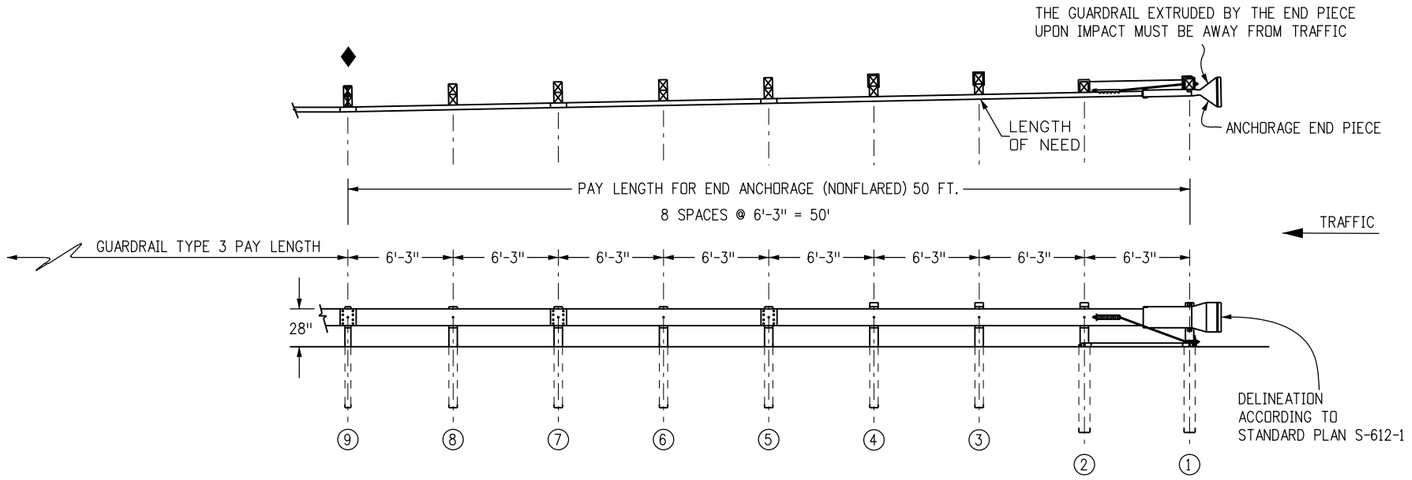
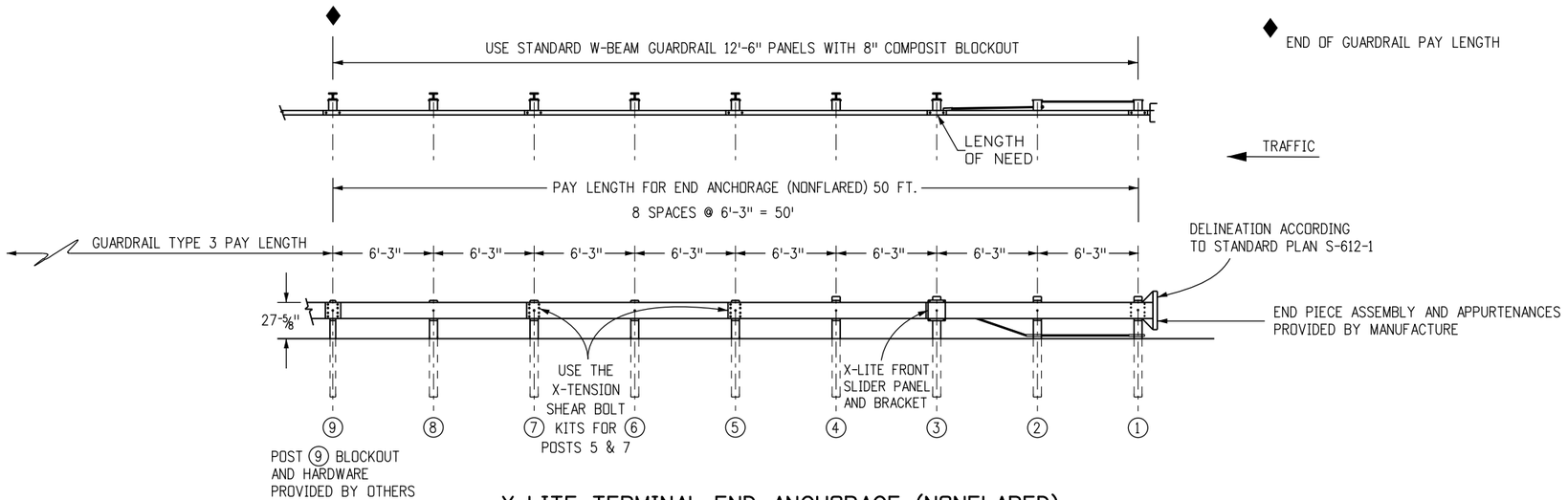


SKT END ANCHORAGE (NONFLARED)

NOTES FOR NONFLARED

1. THE END ANCHORAGE (NONFLARED) SHALL EITHER BE THE SKT GUARDRAIL AS MANUFACTURED BY ROAD SYSTEMS, INC. (TEL. #: 432-263-2435), OR THE X-LITE AS MANUFACTURED BY BARRIER SYSTEMS, INC. (TEL. #: 888-800-3691). THE END ANCHORAGE (NONFLARED) SHALL INCLUDE ALL POST, RAIL, AND HARDWARE ITEMS REQUIRED FOR A COMPLETE UNIT. THE END ANCHORAGE (NONFLARED) SHALL BE INSTALLED CONFORMING TO THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL PROVIDE A COPY OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PARTS LIST TO THE ENGINEER PRIOR TO THE INSTALLATION OF THE DEVICE.
2. WOOD POSTS SHALL BE DRILLED FOR BREAKAWAY CONFORMING TO THE MANUFACTURER'S INSTRUCTIONS.
3. HINGED BREAK AWAY (HBA) STEEL POSTS MAY BE USED CONFORMING TO THE MANUFACTURER'S INSTRUCTIONS.
4. RETROREFLECTOR TABS SHALL NOT BE USED ON THE LAST SEVEN POSTS OF THE END ANCHORAGE (NONFLARED).
5. USE THE MANUFACTURER'S SPECIFIED STEEL FOUNDATION TUBE FOR POSTS (1) AND (2) FOR SKT END ANCHORAGES (NONFLARED).
6. USE THE MANUFACTURE'S SUPPLIED POSTS FOR X-LITE END ANCHORAGE AS FOLLOWS:
   POST 1 - X-LITE, CRIMPED POST SLOTS, GALVANIZED.
   POST 2 - X-LITE, POST II, GALVANIZED.
   POST 3 - X-LITE, CRIMPED POST HOLES, GALVANIZED.
   FOR POSTS 4 THRU 8 - USE STANDARD LINE POST, GALVANIZED.
7. DELINEATION SHALL BE APPLIED TO THE END PIECE AND SHALL NOT BE PAID FOR SEPARATELY BUT BE INCLUDED IN THE COST OF THE WORK. SEE STANDARD PLAN S-612-1.



X-LITE TERMINAL END ANCHORAGE (NONFLARED)

END ANCHORAGES (NONFLARED)

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: DLM		Date:	Comments
Last Modification Date: 10/27/14 Initials: LTA	(R-X)	10/09/14	Added X-Lite End Terminal
Full Path: www.coloradodot.info/business/designsupport	(R-X)	10/09/14	Added Gen Note 6
Drawing File Name: 60600108020.dgn	(R-X)	10/27/14	Removed the ET-Plus End Anchorage (non-flared).
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

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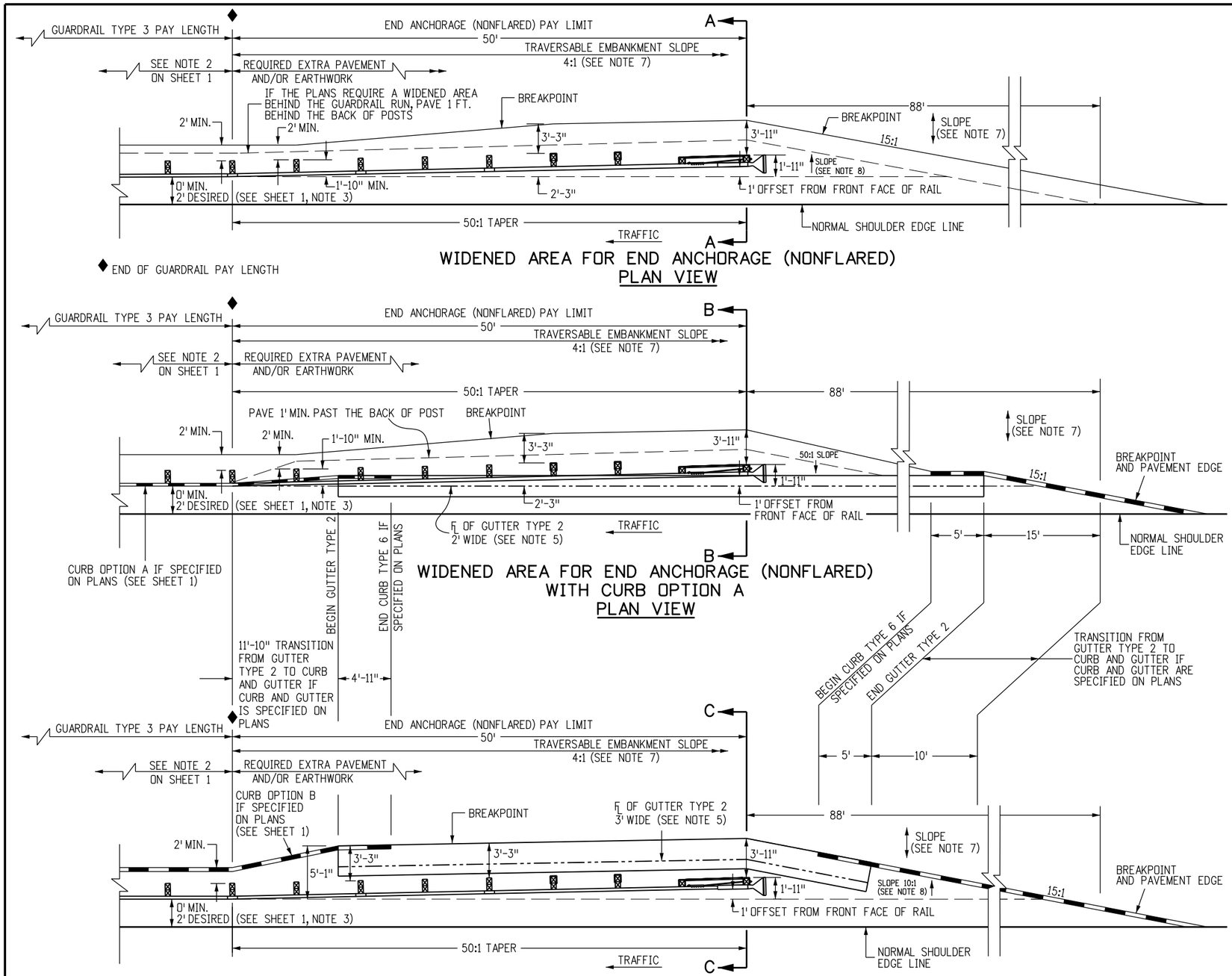
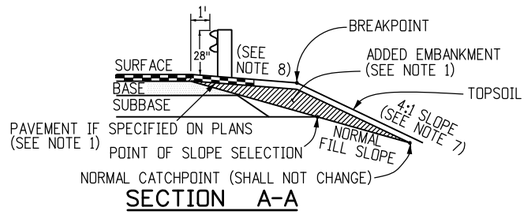
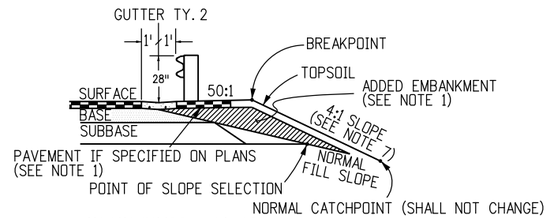


NOTES

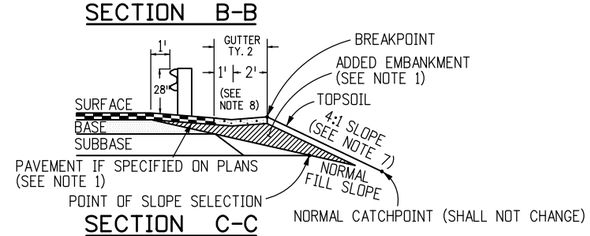
1. PAYMENT FOR THE ADDED EMBANKMENT (APPROXIMATELY 25 CU. YDS.) FOR THE FLARE SHALL BE AS FOLLOWS:
   A. UNDER PAY ITEM 203 WHEN THE CONTRACT PLAN INCLUDES PAY ITEM 203.
   B. INCLUDED IN THE COST OF THE END ANCHORAGE (NONFLARED) WHEN THE CONTRACT PLANS DOES NOT INCLUDE PAY ITEM 203. THE ADDED EMBANKMENT SHALL BE BE CONSTRUCTED IN ACCORDANCE WITH SUBSECTION 203.07, AASHTO T 99.
2. WHEN THE WIDENED AREA IS PAVED, PAYMENT FOR THE PAVEMENT (APPROX. 39 SQ. YDS.) SHALL BE AS FOLLOWS:
   A. UNDER PAY ITEM 403 OR 412 WHEN THE CONTRACT PLAN INCLUDES PAY ITEM 403 OR 412.
   B. INCLUDED IN THE COST OF THE END ANCHORAGE (NONFLARED) WHEN THE CONTRACT PLAN DOES NOT INCLUDE PAY ITEM 403 OR 412, (SEE SHEET 1, NOTE 2 FOR PAYMENT TYPES).
3. WHEN OVERLAY PAVING, THE FINISHED SURFACE AT EACH POST SHALL NOT BE ABOVE THE TOP BREAKWAY HOLE OR STRUT ASSEMBLY. THE WIDENED AREA AT THE END ANCHORAGE (NONFLARED) SHALL NOT BE OVERLAYED UNLESS PAVEMENT CONDITIONS WARRANT IT BEING OVERLAYED. ANY OVERLAY PAVEMENT ABUTTING THE END ANCHORAGE (NONFLARED) SHALL BE TAPERED TO PREVENT A DROP IN THE PAVED SURFACE BELOW THE RAIL.
4. SEE SHEETS 1, 2 AND 3 FOR STANDARD TYPE 3 GUARDRAIL AND INSTALLATIONS DETAILS.
5. THE COST OF THE GUTTER WILL BE PAID FOR AS "GUTTER TYPE 2 (2 FT.)" FOR A LENGTH OF 111 FT., OR "GUTTER TY. 2 (3 FT.)" FOR A LENGTH OF 50 FT.
6. INLETS OR RUNDOWNS MAY BE USED INSTEAD OF THE GUTTER IF SPECIFIED ON THE PLANS. NO ADDITIONAL CURB SHALL BE ADDED IN THE VICINITY OF THE END TREATMENT.
7. 4:1 OR FLATTER SLOPES IN THE TRAVERSABLE AREA SHALL BE USED BEHIND THE END ANCHORAGE AREA, AND IN ADVANCE OF POST (1). IF THIS IS NOT POSSIBLE A MINIMUM 3:1 SLOPE MAY BE USED IF APPROVED BY THE ENGINEER.
8. THE WIDENED AREA, EXCEPT FOR CURB OPTION A, SHALL HAVE THE SAME GRADING AS BENEATH THE ADJACENT GUARDRAIL: 10:1 OR FLATTER IF MORE THAN 2 FT. FROM SHOULDER, OR SLOPE EQUAL TO ROADWAY SLOPE IF 2 FT. OR LESS FROM SHOULDER.
9. WIDENING FOR END ANCHORAGES SHALL BE PAVED ON INTERSTATES AND FREEWAYS. FOR OTHER HIGHWAYS, PAVING SHALL BE AS SHOWN ON THE PLANS.
10. HINGED BREAK AWAY (HBA) STEEL POSTS MAY BE USED. SEE MANUFACTURER'S DETAILS.



SECTION A-A



SECTION B-B



SECTION C-C

Computer File Information		Sheet Revisions	
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GUARDRAIL TYPE 3 W-BEAM

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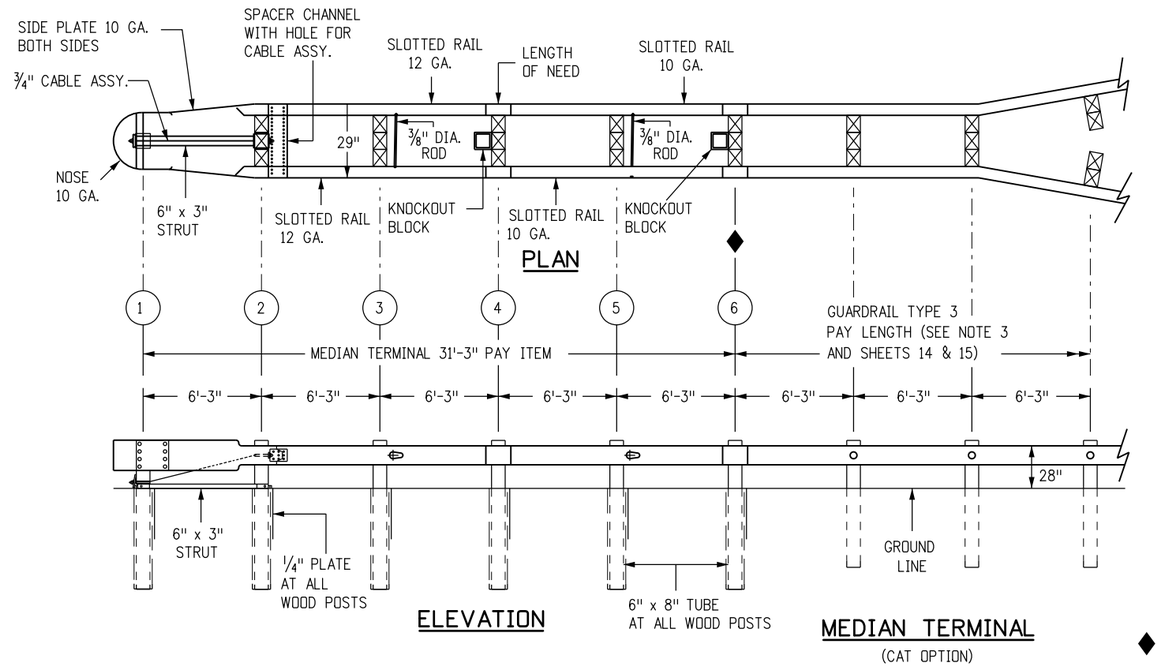


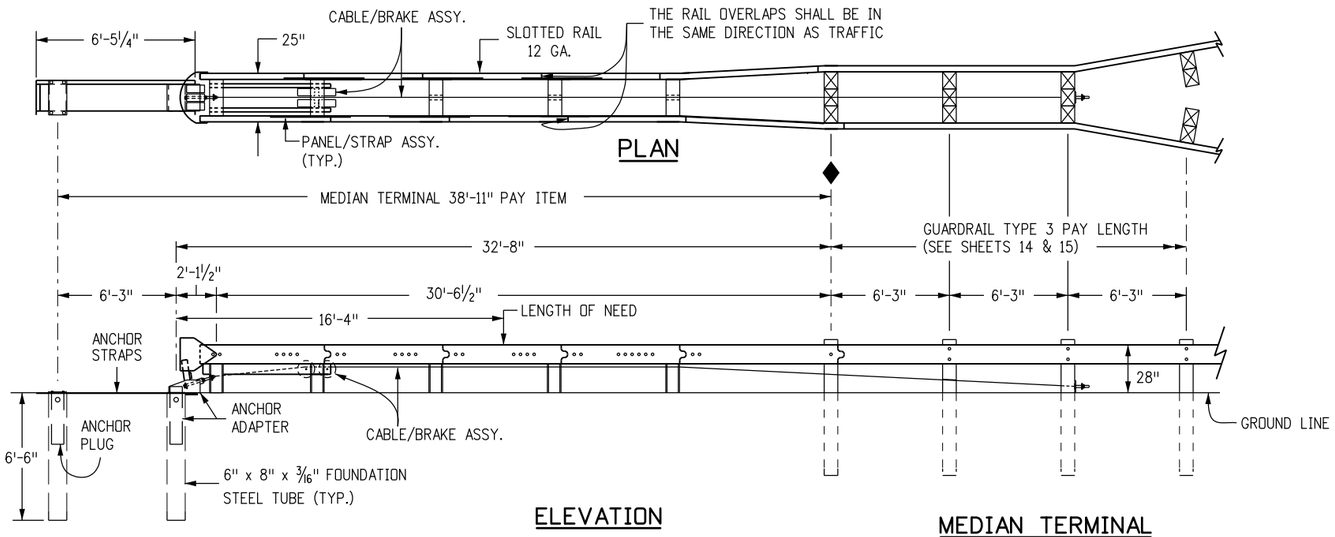
MEDIAN TERMINAL

(CAT OPTION)

◆ END OF GUARDRAIL PAY LENGTH

MEDIAN TERMINAL NOTES

1. THE MEDIAN TERMINAL SHALL BE THE CAT 350 AS MANUFACTURED BY TRINITY INDUSTRIES INC. (TEL #: 800-722-7976), OR THE BRAKEMASTER AS MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC. AS DISTRIBUTED BY INTERWEST SAFETY SUPPLY (TEL #: 303-733-8447), OR THE FLEAT-MT MEDIAN TERMINAL AS MANUFACTURED BY ROAD SYSTEM INC. (TEL. #: 432-263-2435).
2. ONE MEDIAN TERMINAL SHALL INCLUDE ALL POSTS, RAIL, AND HARDWARE ITEMS REQUIRED FOR A COMPLETE UNIT. THE DEVICE SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S INSTRUCTIONS. THE CONTRACTOR SHALL PROVIDE A COPY OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PARTS LISTS TO THE ENGINEER PRIOR TO THE INSTALLATION OF THE DEVICE.
3. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE MEDIAN TERMINAL SHALL BE INSTALLED FOR BIDIRECTIONAL TRAFFIC APPLICATION.
4. MEDIAN GUARDRAIL POSTS MAY BE STEEL OR WOOD.
5. EACH INSTALLATION SHALL BE SUPERVISED AND CERTIFIED AS CORRECT UPON COMPLETION BY A REPRESENTATIVE OF THE DEVICE MANUFACTURER OR BY AN EMPLOYEE OF THE CONTRACTOR WHO IS A CERTIFIED INSTALLER. THE CERTIFIED INSTALLER SHALL HAVE COMPLETED DEVICE TRAINING AND SHALL BE REGISTERED WITH THE MANUFACTURER AS A CERTIFIED INSTALLER.
6. DELINEATION, IF REQUIRED, SHALL BE APPLIED TO THE END PIECE AND WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK. SEE STANDARD PLAN S-612-1.



MEDIAN TERMINAL

(BRAKEMASTER OPTION)

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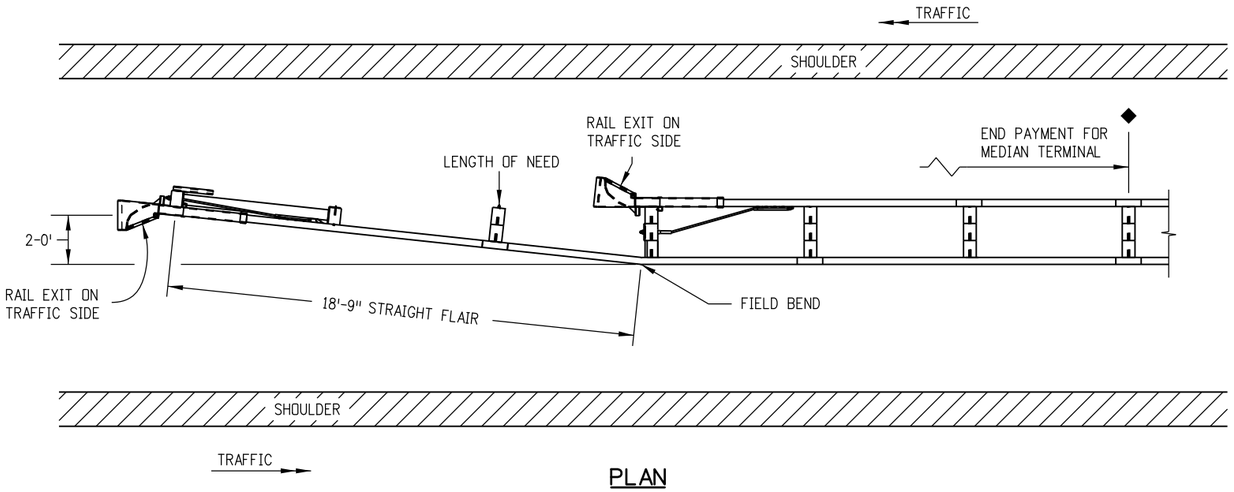
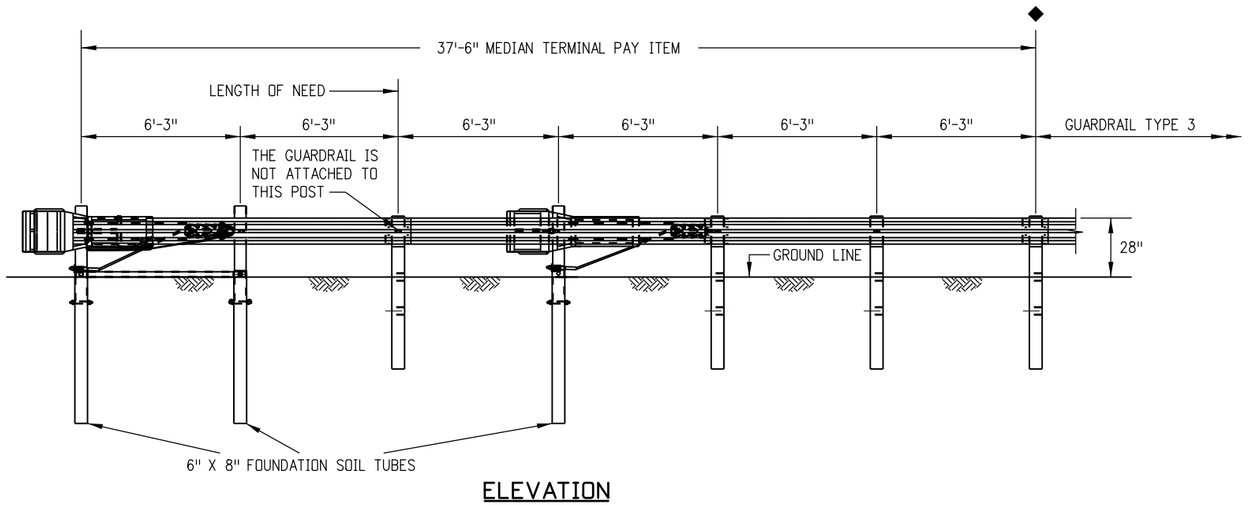


PLAN

END OF GUARDRAIL PAY LENGTH



ELEVATION

MEDIAN TERMINAL
(FLEAT-MT OPTION)

FLEAT- MT NOTES

1. THE FLEAT-MT MAY BE SELECTED AS A MEDIAN TERMINAL UNLESS OTHERWISE SHOWN IN THE PLANS.
2. BREAKAWAY POSTS ARE REQUIRED WITH THE FLEAT-MT.
3. THE SOIL TUBES SHALL NOT PROTRUDE MORE THAN 4 INCHES ABOVE GROUND (MEASURED ALONG A 5 FEET CORD). SITE GRADING MAY BE NECESSARY TO MEET THIS REQUIREMENT.
4. THE SOIL TUBES SHALL BE DRIVEN WITH AN APPROVED DRIVING HEAD AND NOT BE DRIVEN WITH THE POST IN THE TUBE. IF THE TUBES ARE PLACED IN DRILLED HOLES, THE BACKFILL MATERIAL MUST BE SATISFACTORILY COMPACTED TO PREVENT SETTLEMENT.
5. WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE, 20 INCH DEEP MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROX. 2½ INCH DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.
6. THE BREAKAWAY CABLE ASSEMBLY MUST BE TAUT. DO NOT TWIST THE CABLE WHEN TIGHTENING NUTS.

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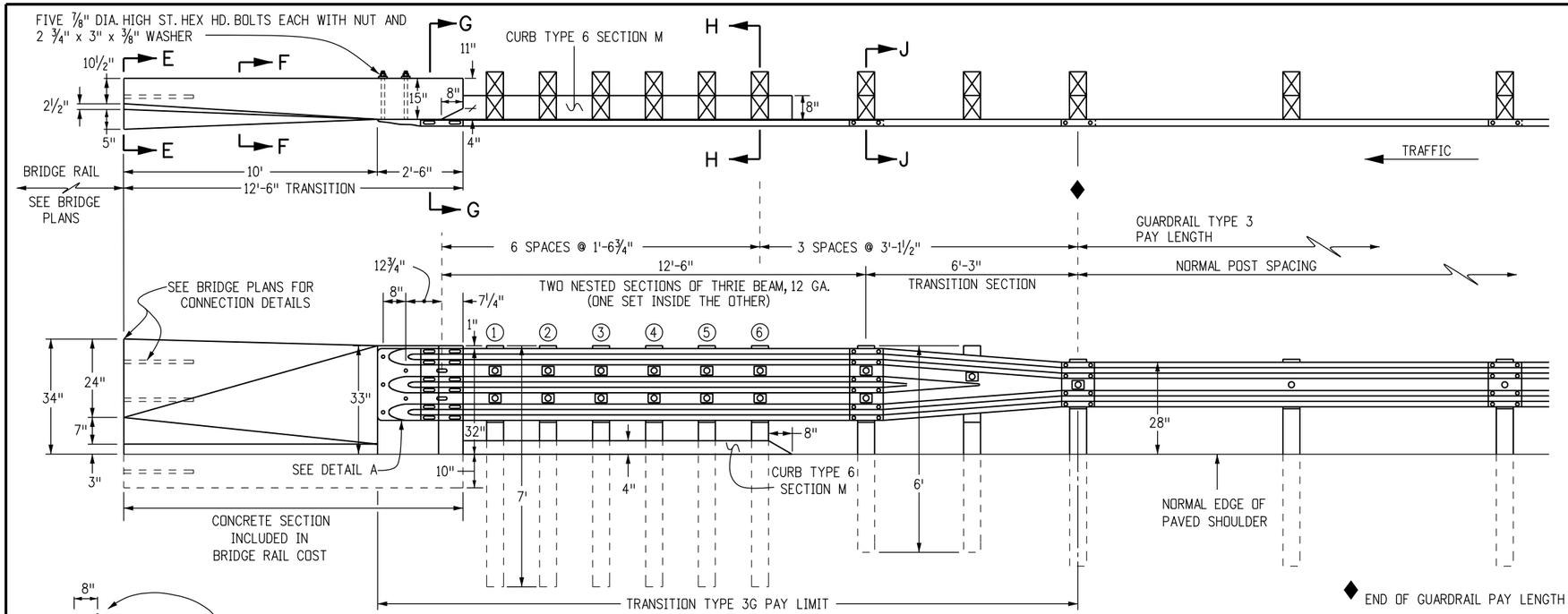
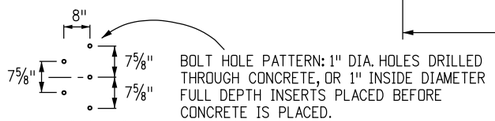
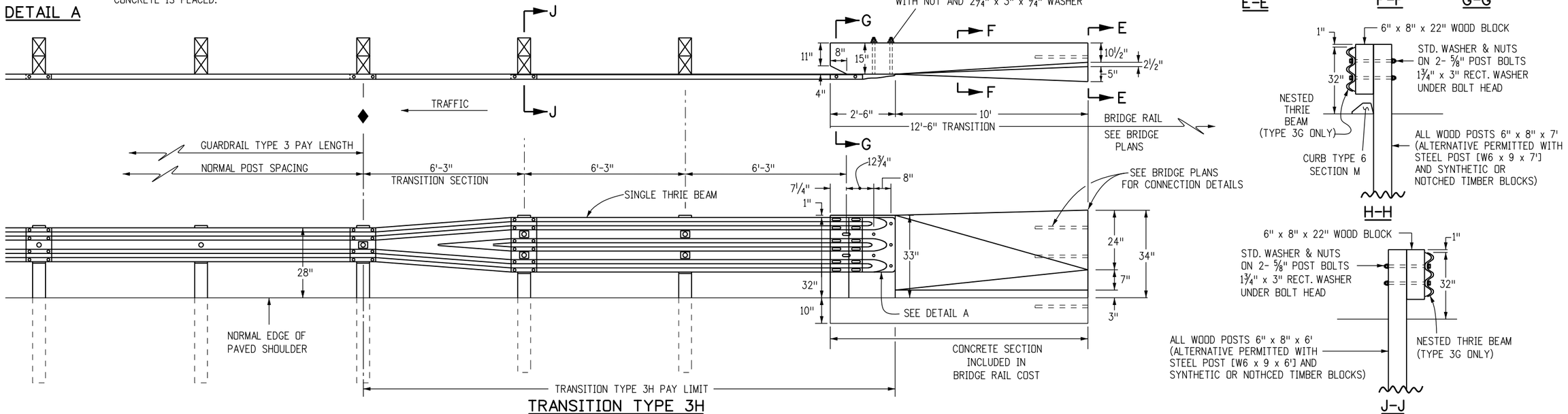


TRANSITION TYPE 3G



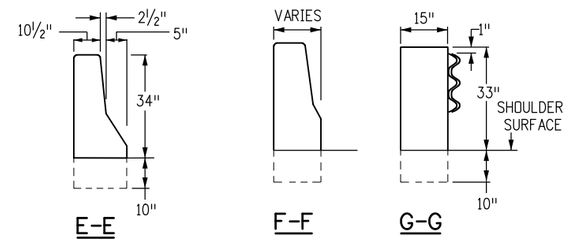
DETAIL A



TRANSITION TYPE 3H

NOTES

1. TRANSITION TYPE 3G IS FOR USE AT BOTH ENDS OF BRIDGES ON TWO-WAY HIGHWAYS AND AT THE APPROACH END OF BRIDGES ON ONE-WAY HIGHWAYS.
2. TRANSITION TYPE 3H IS FOR USE AT THE TRAILING END OF BRIDGES ON ONE-WAY HIGHWAYS.
3. THE THRIE BEAM SECTION IN TRANSITIONS TYPES 3G AND 3H MAY BE SHOP BENT TO FIT CURVES THAT ARE GREATER THAN OR EQUAL TO A 10 FT. RADIUS. HOWEVER, THE 6 FT.-3 IN. TRANSITION SECTION SHALL NOT BE BENT.
4. A 12 FT.-6 IN. CONCRETE TRANSITION IS REQUIRED BETWEEN THE TYPE 3G OR 3H AND TYPE 7 BRIDGE RAIL. SEE STANDARD PLAN M-606-13 FOR THE TRANSITION BETWEEN TYPE 3 GUARDRAIL AND TYPE 7 GUARDRAIL.
5. TRANSITIONS TYPE 3G AND TYPE 3H ARE ALSO USED TO CONNECT TO TYPE 8 AND TYPE 10 BRIDGE RAIL. SEE BRIDGE PLANS FOR CONNECTION DETAILS.
6. BACKUP PLATE IS NOT REQUIRED AT POSTS ON TYPE 3G AND 3H.
7. ⊡ THIS SYMBOL IN THE ELEVATION DRAWINGS SHOWS THE LOCATIONS WHERE A RECTANGULAR WASHER IS REQUIRED UNDER THE POST BOLT HEAD.
8. CURB TYPE 6 SECTION M, MAY BE ASPHALT OR CONCRETE. THE COST OF CURB IS INCLUDED IN THE WORK, UNLESS A SEPARATE PAY ITEM IS INCLUDED IN THE BID SCHEDULE.
9. POSTS ① THRU ⑥ ARE 7 FT. LONG. ALL OTHER POSTS SHALL BE STANDARD 6 FT. IN LENGTH UNLESS OTHERWISE SPECIFIED IN THE CONTRACT.
10. NOTCHED RAIL BLOCKS MANUFACTURED FROM SYNTHETIC MATERIAL WILL BE ACCEPTED AS ALTERNATIVES TO WOOD NOTCHED BLOCKS FOR USE WITH STEEL POSTS PROVIDED THAT THE BLOCKS HAVE RECEIVED FHWA APPROVAL AND ARE CERTIFIED AS IDENTICAL TO THE SPECIMENS USED FOR TESTING AND APPROVAL. STEEL BLOCKS ARE NOT ALLOWED.



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GUARDRAIL TYPE 3 W-BEAM

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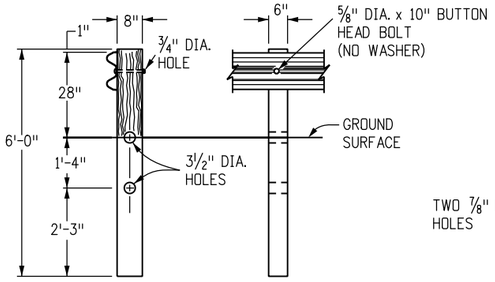
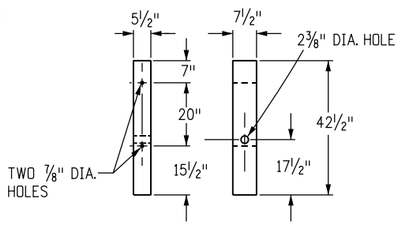


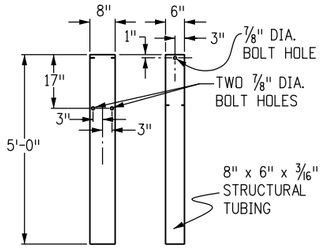
CONTROLLED RELEASING TERMINAL (CRT) POST ①



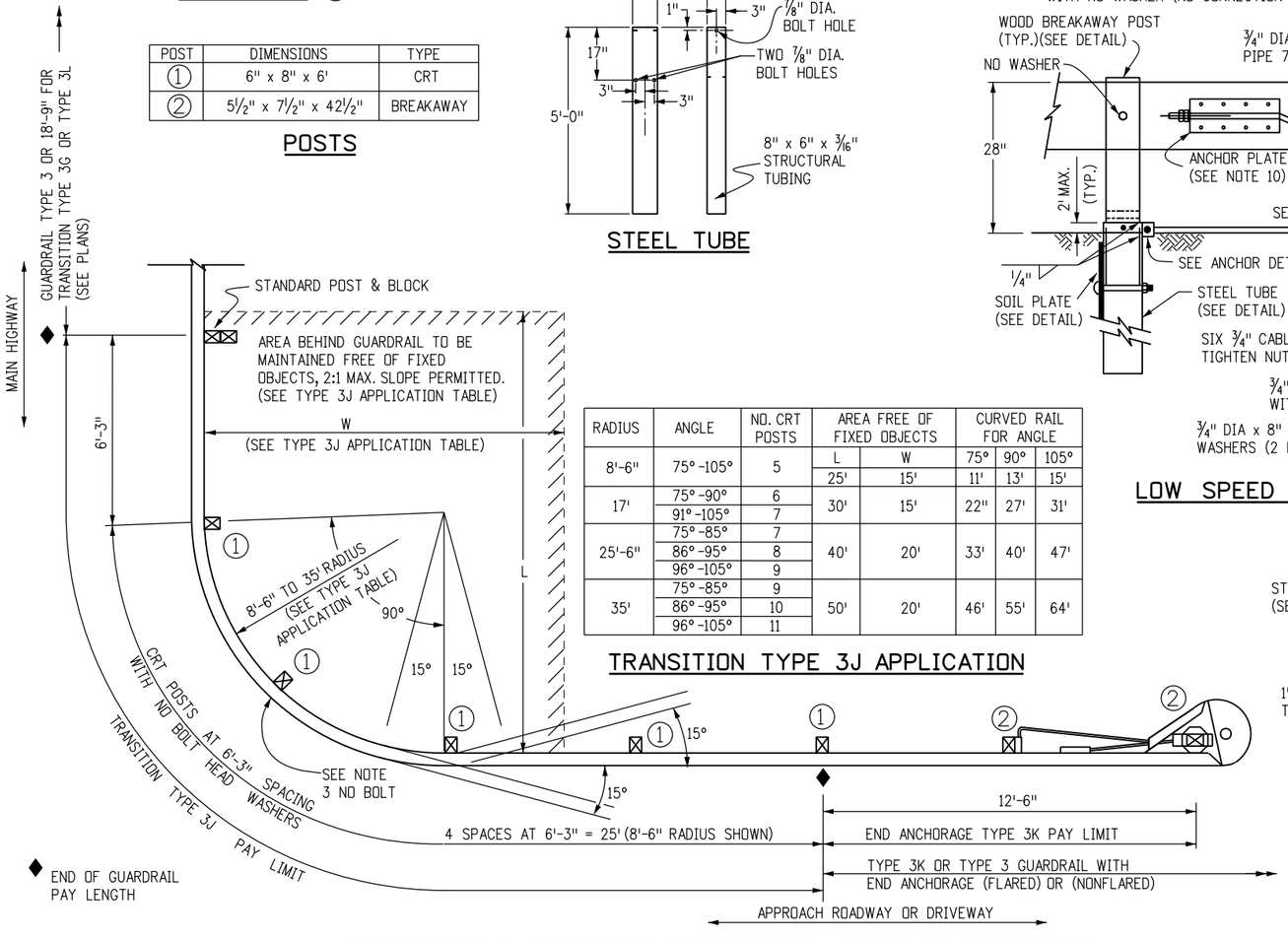
WOOD BREAKAWAY POST ②

POST	DIMENSIONS	TYPE
①	6" x 8" x 6'	CRT
②	5 1/2" x 7 1/2" x 42 1/2"	BREAKAWAY

POSTS



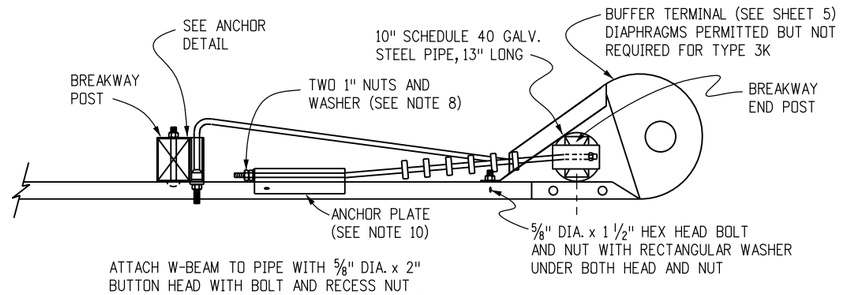
STEEL TUBE

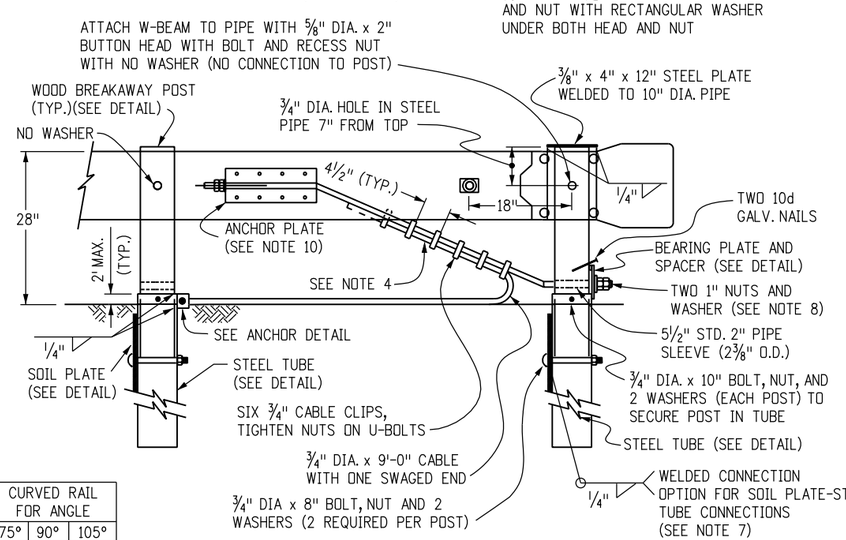


RADIUS	ANGLE	NO. CRT POSTS	AREA FREE OF FIXED OBJECTS		CURVED RAIL FOR ANGLE		
			L	W	75°	90°	105°
8'-6"	75°-105°	5	25'	15'	11'	13'	15'
17'	75°-90°	6	30'	15'	22"	27'	31'
	91°-105°	7					
25'-6"	75°-85°	7	40'	20'	33'	40'	47'
	86°-95°	8					
	96°-105°	9					
35'	75°-85°	9	50'	20'	46'	55'	64'
	86°-95°	10					
	96°-105°	11					

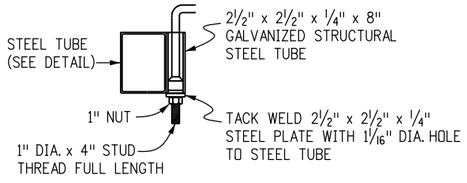
TRANSITION TYPE 3J APPLICATION

INTERSECTING ROADWAYS TRANSITION - TYPE 3J TRANSITION

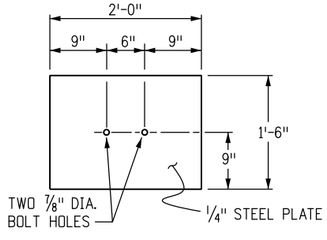




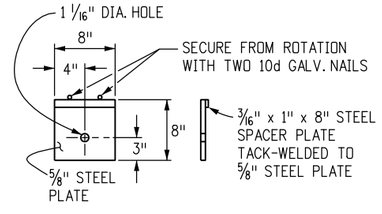
LOW SPEED TERMINAL - TYPE 3K



ANCHOR DETAIL



SOIL PLATE



BEARING PLATE FOR STEEL TUBE

NOTES

1. APPLICATION: THE TRANSITION TYPE 3J MAY BE USED TO SHIELD HAZARDS AT THE INTERSECTION OF TWO ROADWAYS. TYPICAL APPLICATIONS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
   A. CANAL SERVICE ROADS AT BRIDGE ENDS.
   B. INTERRUPTIONS IN GUARDRAIL RUNS BY INTERSECTING ROADWAYS, ETC..

   THE LOW SPEED (<45 MPH) END ANCHORAGE TYPE 3K SHALL BE USED ONLY ON DRIVEWAYS AND LOW SPEED SERVICE ROADS. WHEN AN APPROVED CRASH-TESTED END TREATMENT IS REQUIRED USE THE END ANCHORAGE (FLARED) OR (NONFLARED) WITH 37 FT.-6 IN. LENGTH.
2. GRADING AND PAVING FOR THE 3J & 3K SHALL MATCH THE GRADING AND PAVING OF THE GUARDRAIL TO WHICH THEY ARE ATTACHED, AND SHALL BE IN ACCORDANCE WITH SHEET ONE OF THIS STANDARD. MAXIMUM FILL SLOPE SHALL BE 2:1.
3. THE RAIL IS NOT BOLTED TO THE CRT POST AT THE CENTER OF THE CURVE FOR THE 8 FT.-6 IN., 17 FT., AND 25 FT.-6 IN. RADII. PLATES SHALL CONFORM TO ASTM A 36, AND THE STRUCTURAL TUBING TO ASTM A 500.
4. THE 3/4IN. GALVANIZED WIRE ROPE (CABLE) SHALL CONFORM TO AASHTO M 30 TYPE II.
5. PLATES SHALL CONFORM TO ASTM A 36, AND STRUCTURAL TUBING TO ASTM A 500. WELDING SHALL MEET ALL REQUIREMENTS OF THE AMERICAN WELDING SOCIETY.
6. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN CONFORMANCE WITH ASTM A 123. POSTS SHALL NOT BE PUNCHED, DRILLED, CUT, OR WELDED AFTER GALVANIZING.
7. WHEN THE SOIL PLATE WELDED OPTION IS SELECTED, SOIL PLATE CONNECTION BOLT HOLES ARE NOT REQUIRED.
8. OUTSIDE NUT SHALL BE TORQUED AGAINST INSIDE NUT WITH THE CABLE INSTALLED TAUT BETWEEN THE ANCHOR PLATE AND FIRST POST.
9. ALL CURVED GUARDRAIL SHALL BE SHOP BENT.
10. SEE SHEET 4 FOR ANCHOR PLATE AND OTHER DETAILS.
11. THE STEEL TUBE MAY BE DRIVEN WITH WOOD POST INSERTED IF NO DAMAGE OCCURS TO THE POST OR BOLTS.

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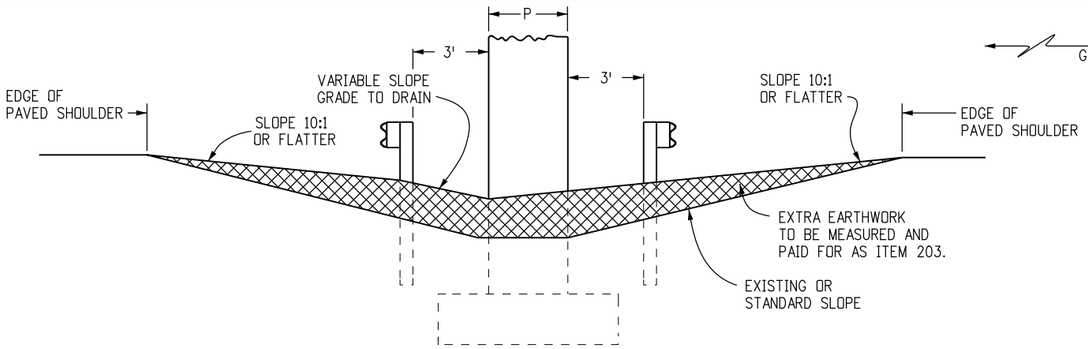
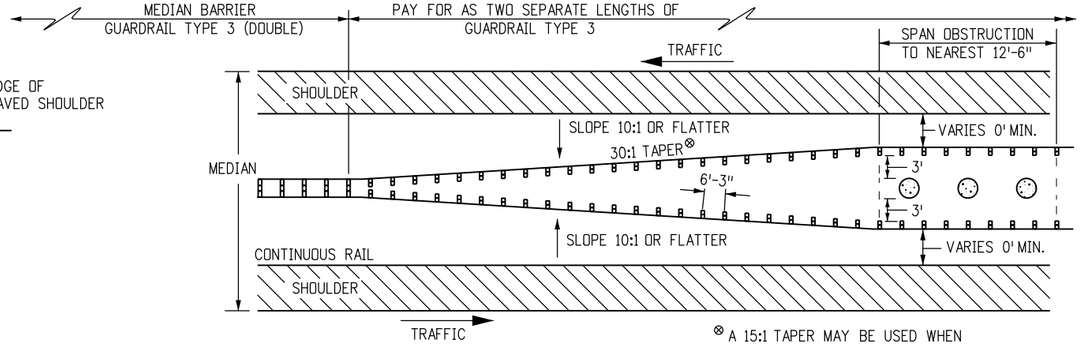
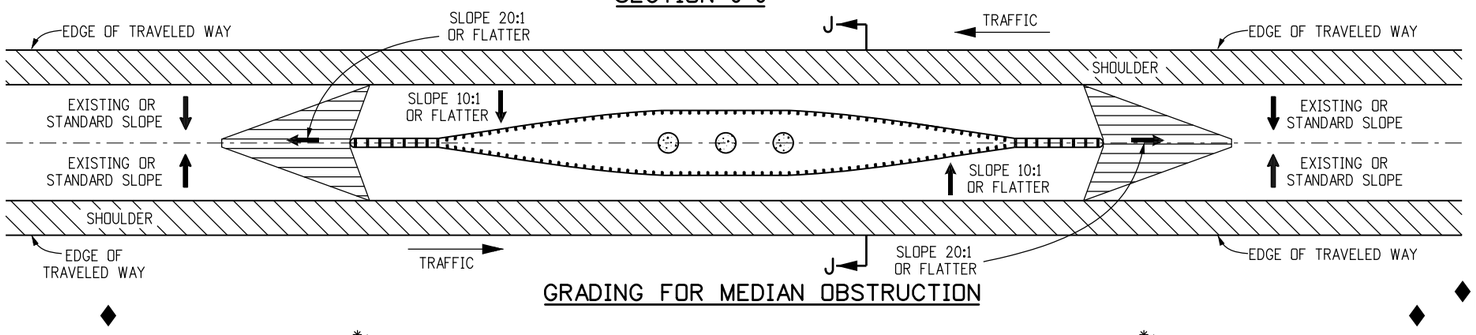


SECTION J-J

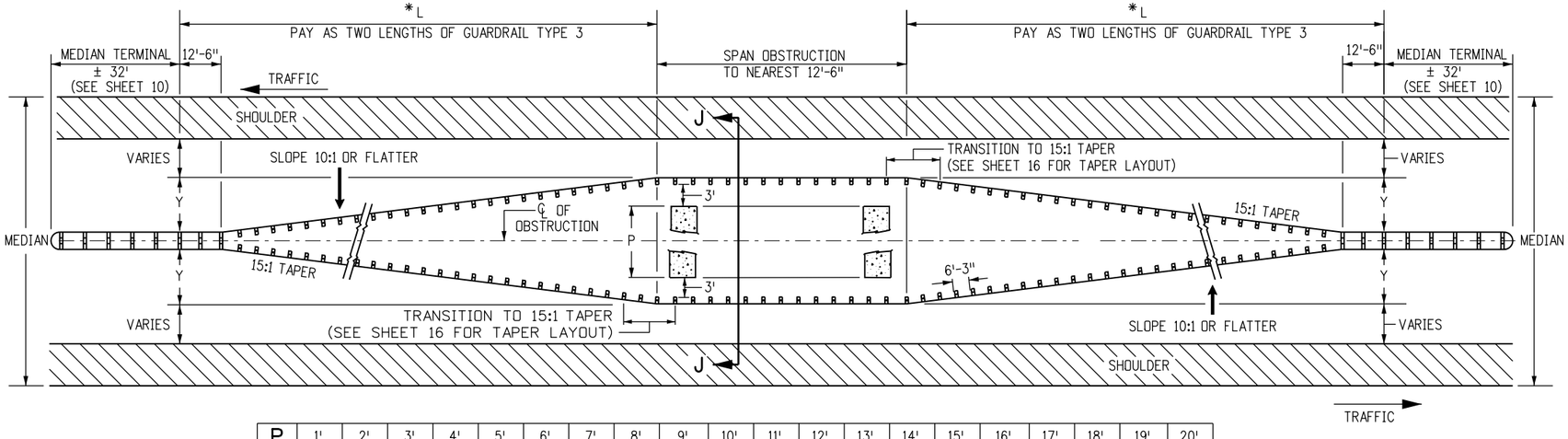


⊗ A 15:1 TAPER MAY BE USED WHEN THE BARRIER ENDS IN THE MEDIAN TERMINAL

OBSTRUCTION IN MEDIAN 30 FT. WIDE OR LESS



GRADING FOR MEDIAN OBSTRUCTION



P	1'	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'
Y	4'-1"	4'-7"	5'-1"	5'-7"	6'-1"	6'-7"	7'-1"	7'-7"	8'-1"	8'-7"	9'-1"	9'-7"	10'-1"	10'-7"	11'-1"	11'-7"	12'-1"	12'-7"	13'-1"	13'-7"
L	75'	87'-6"		100'	112'-6"		125'		137'-6"	150'		162'-6"		175'		187'-6"	200'		212'-6"	225'

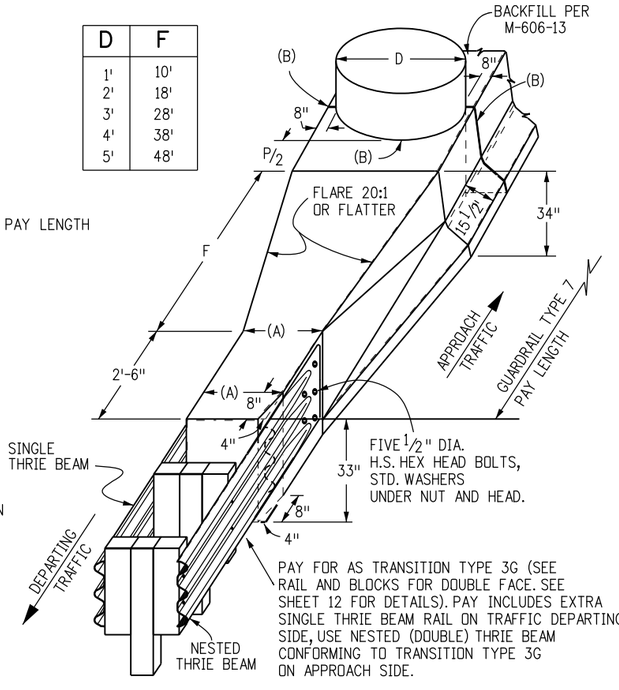
*L IS MEASURED ALONG FACE OF GUARDRAIL

GUARDRAIL FOR OBSTRUCTION IN MEDIANS WIDER THAN 30 FT.

NOTE: FOR OBSTRUCTIONS (P) THAT ARE WIDER THAN 20 FT. IN MEDIANS USE SHEET 17.

◆ END OF GUARDRAIL PAY LENGTH

D	F
1'	10'
2'	18'
3'	28'
4'	38'
5'	48'



(A). TIMBER POSTS 2 FT., STEEL POSTS 1 FT.-9½IN.

(B). ½ IN. PREFORMED JOINT MATERIAL

NARROW MEDIAN DETAIL

USUALLY LESS THAN 30 FT. WIDE MEDIAN WITH ALL PAVED SURFACE

OBSTRUCTIONS IN MEDIANS

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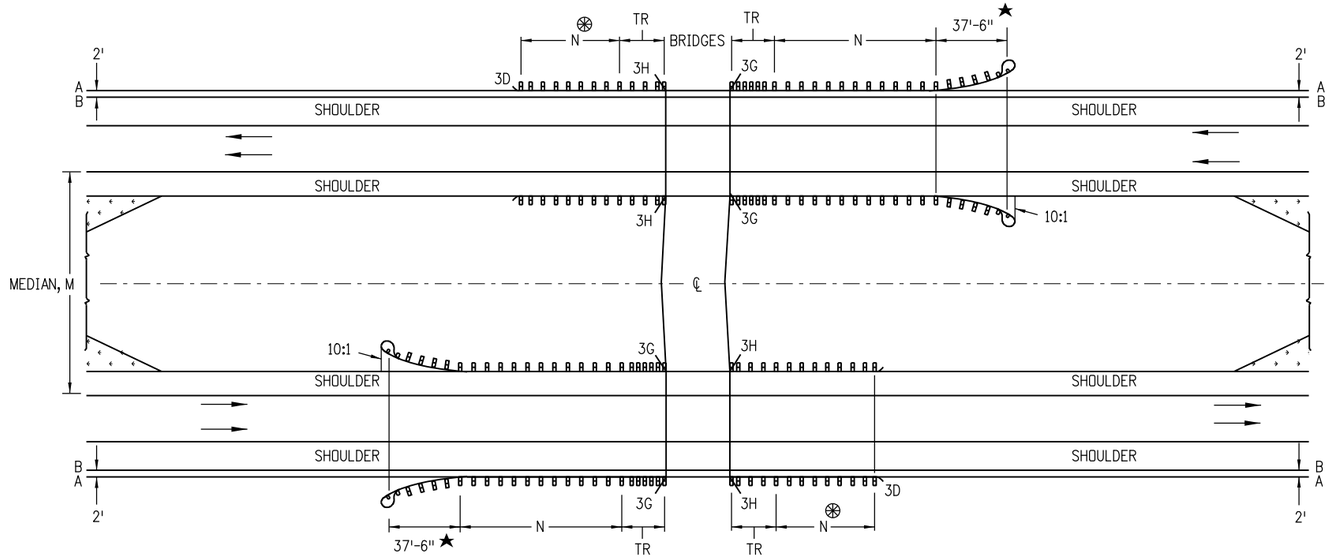

MULTILANE DIVIDED HIGHWAYS FOR STEEP EMBANKMENTS IN MEDIAN

NOTES:

1. MEDIAN BARRIERS TANGENT TO THE ROADWAY MAY BE USED WHERE THE SHOULDER SLOPES IN THE MEDIAN ARE STEEP.
2. BARRIER LENGTHS SHALL BE INCREASED TO ACCOUNT FOR STEEP EMBANKMENTS OR OTHER HAZARDS WITHIN CLOSE PROXIMITY OF BRIDGES.

⊛ — DO NOT CONSTRUCT THE TR AND GUARDRAIL ON THE TRAILING BRIDGE ENDS IF SITE CONDITIONS DO NOT WARRANT THE USE OF GUARDRAIL.

N — SHOWN ON PLANS. LENGTH TO SHIELD ALL HAZARDS IS BASED ON GUARDRAIL'S LENGTH OF NEED COMPUTATION. SEE AASHTO ROADWAY DESIGN GUIDE. THE MINIMUM SHALL BE 12 FT. - 6 IN., WHERE SITE CONDITIONS ALLOW. THE TOTAL LENGTH OF NEED WILL INCLUDE THE LENGTH OF TRANSITION, THE LENGTH OF RAIL (N), AND ANY REDIRECTIVE LENGTH IN THE RAIL END TREATMENT.

TR — 18 FT.-9 IN. FOR 3G AND 3H.

A — EDGE OF 8 FT. OR 10 FT. SHOULDER.

B — EDGE OF 6 FT. OR LESS SHOULDER.

★ — END ANCHORAGE CAN BE FLARED OR NONFLARED.

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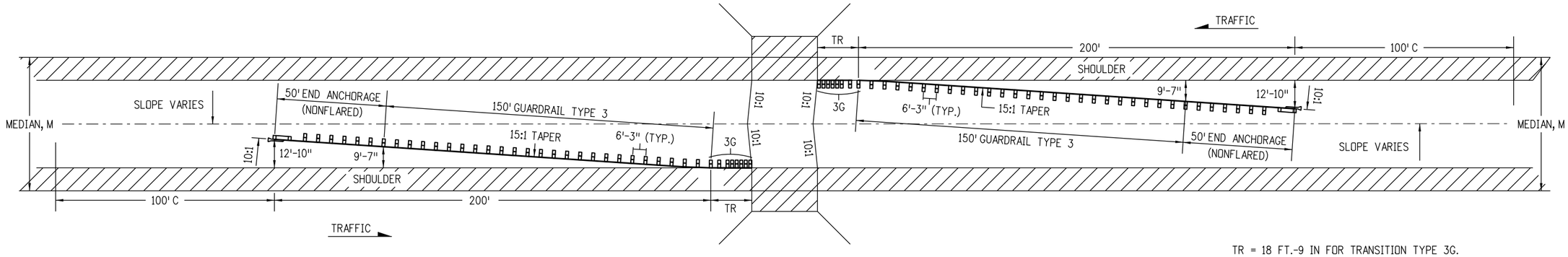
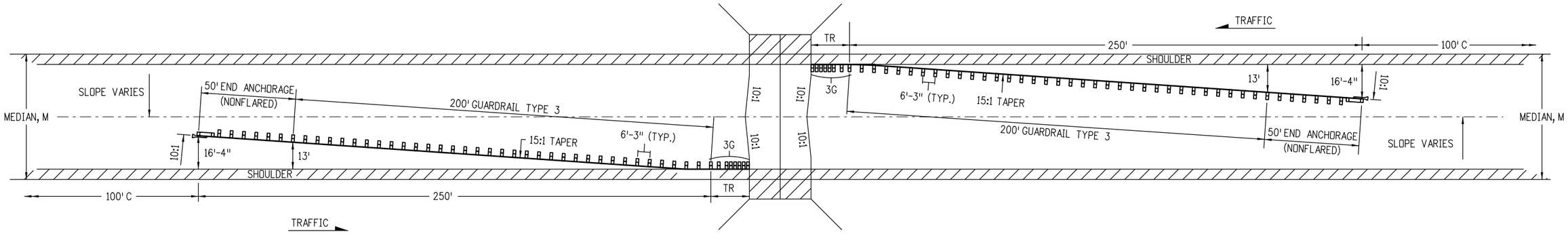
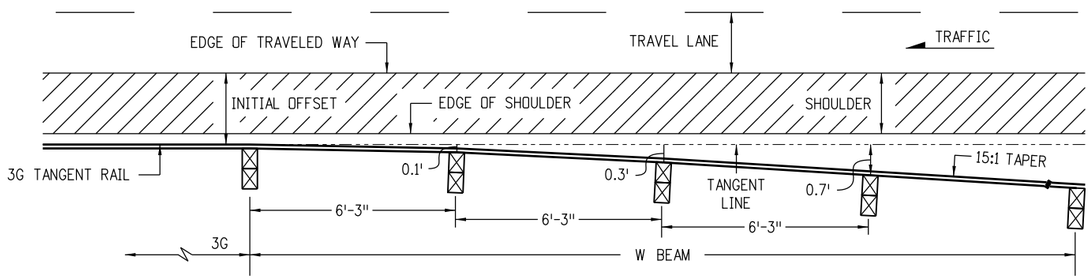


MEDIANS 60 FT. AND OVER WITH 10 FT. OR WIDER SHOULDERS.

TR = 18 FT.-9 IN FOR TRANSITION TYPE 3G.
C = CHANGE: 100 FT. TRANSITION TO NORMAL SLOPE.
M = WIDTH OF MEDIAN.



MEDIANS 60 FT. AND OVER WITH 4 to 8 FT. SHOULDERS.



TRANSITION TO TYPICAL 15:1 TAPER

NOTES:

1. GUARDRAIL TRANSITIONS FROM PARALLEL TO ROADWAY SHOULDER AT 3G SEGMENT TO 15:1 TAPER WITHIN 18'-9" BASED ON POST OFFSET DIMENSIONS SHOWN.
2. SEE SHEET 15 FOR THE RIGHT SHOULDER GUARDRAIL LAYOUT.

MULTILANE DIVIDED HIGHWAYS - (DEPRESSED MEDIANS, 60 FT. AND OVER WITH OPEN HAZARDS OR OBSTRUCTIONS)

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Creation Date: 07/04/12 Initials: DLM		Date:	Comments
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GUARDRAIL TYPE 3
W-BEAM

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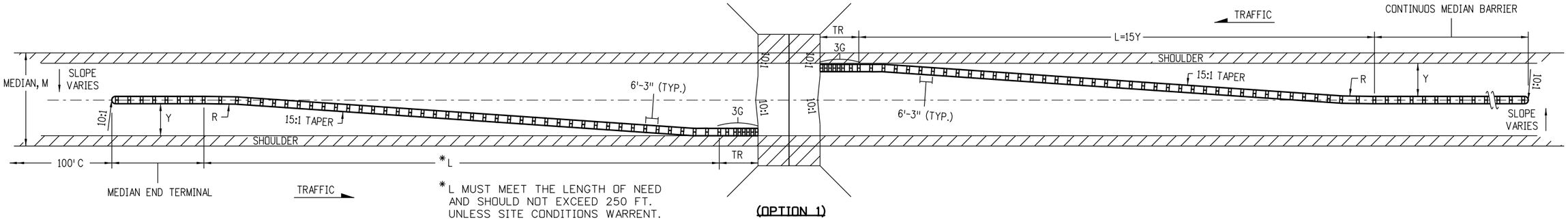
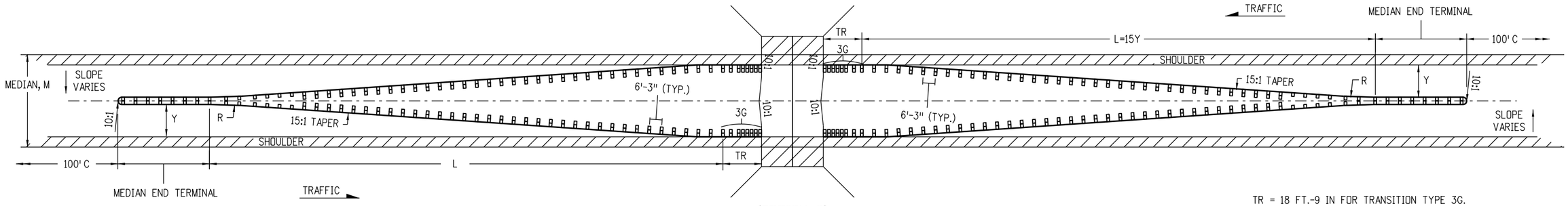
NOTES

1. GUARDRAIL TRANSITIONS FROM PARALLEL TO ROADWAY SHOULDER AT 3G SEGMENT TO 15:1 TAPER WITHIN 18'-9" BASED ON POST OFFSET DIMENSIONS SHOWN.
2. THE OPTION 1 LAYOUT SHALL BE USED WHEN "Y" EXCEEDS 16 FEET OR WHEN MEDIAN BARRIER IS CONTINUOUS.
3. THE OPTION 2 LAYOUT SHALL BE USED WHEN "Y" IS 16 FEET OR LESS.
4. SEE SHEET 15 FOR RIGHT SHOULDER GUARDRAIL LAYOUT.

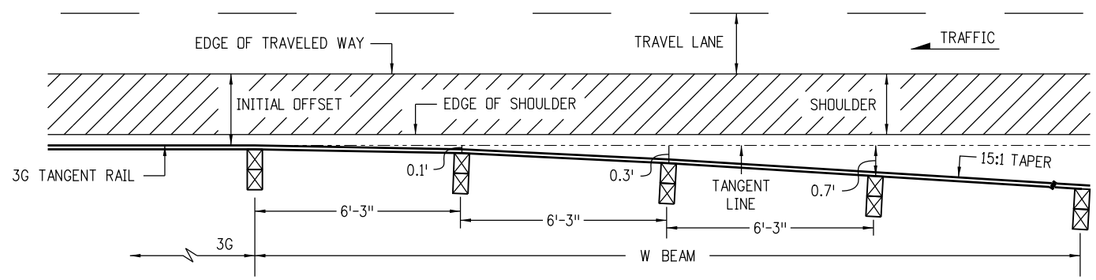


* L MUST MEET THE LENGTH OF NEED AND SHOULD NOT EXCEED 250 FT. UNLESS SITE CONDITIONS WARRENT.

(OPTION 1)



(OPTION 2)



TRANSITION TO TYPICAL 15:1 TAPER

TR = 18 FT.-9 IN FOR TRANSITION TYPE 3G.
C = CHANGE: 100 FT. TRANSITION TO NORMAL SLOPE.
M = WIDTH OF MEDIAN.
L = TOTAL LENGTH PAID AS GUARDRAIL TYPE 3.
Y = FINAL OFFSET AT END.

MULTILANE DIVIDED HIGHWAYS - (DEPRESSED MEDIANS, 21 - 59 FT. WITH OPEN HAZARDS OR OBSTRUCTIONS)

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GUARDRAIL TYPE 3 W-BEAM

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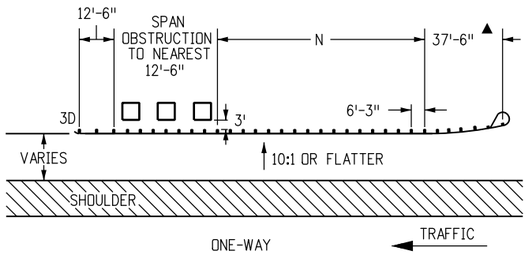
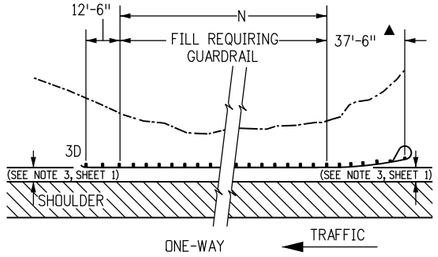
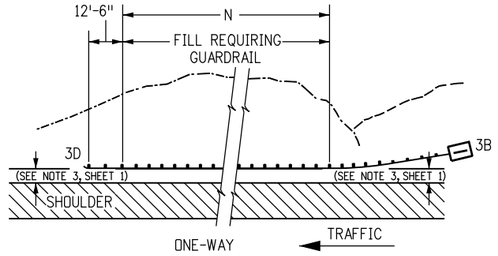
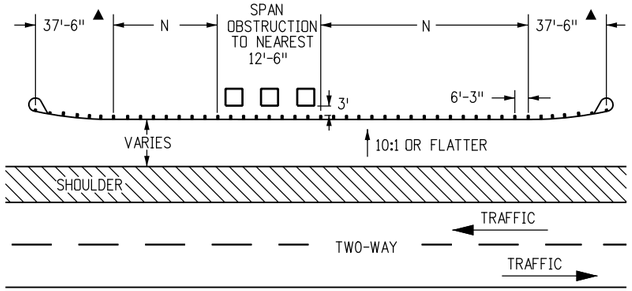
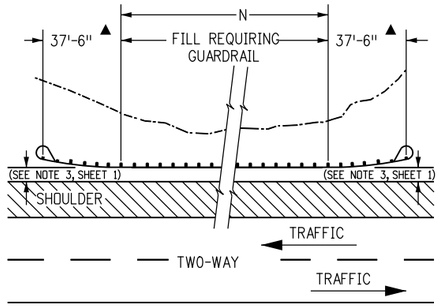




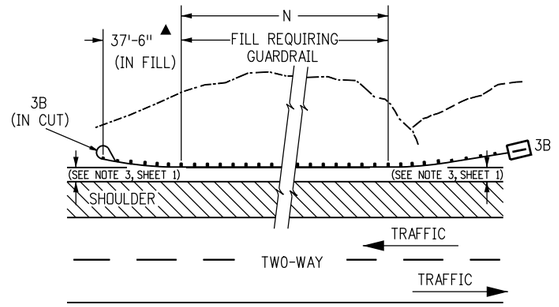




GUARDRAIL FOR ROADSIDE OBSTRUCTIONS



GUARDRAIL FOR ROADSIDE FILL CONSTRUCTION

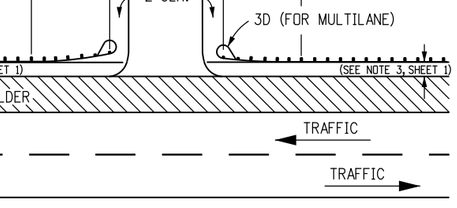


GUARDRAIL FOR ROADSIDE CUT-TO-FILL CONDITION

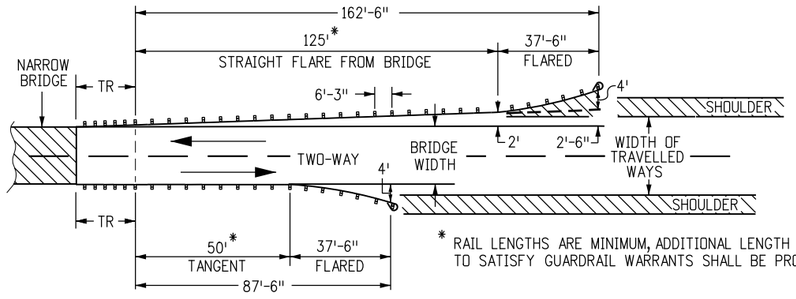
NOTES

1. THE TYPE 3G OR 3H TRANSITIONS (SEE SHEET 12) SHALL BE USED TO CONNECT A TYPE 3 W-BEAM TO TYPE 7 CONCRETE BARRIER OR TO A TYPE 7, 8, OR 10 BRIDGE RAIL. FOR A TRANSITION FROM A ROADWAY TYPE 3 W-BEAM TO A BRIDGE RAIL TYPE 3 WITH BACKING TUBES, THE TRANSITION TYPE 3L SHOWN ON SHEET 20 SHALL BE USED.
2. "TR" WILL BE 18 FT.-9 IN. FOR THE TRANSITIONS TYPE 3G AND 3H, AND 25 FT. FOR THE TRANSITION TYPE 3L.
3. THE GUARDRAIL LENGTH DIMENSION "N" IS THE LENGTH AS DETERMINED BY THE LENGTH OF NEED COMPUTATION AND IS SHOWN ON THE PLANS. THE MINIMUM IS 12 FT.-6 IN. WHERE SITE CONDITIONS ALLOW. THE OVERALL REQUIRED LENGTH OF NEED CAN INCLUDE THE LENGTH OF TRANSITION, THE LENGTH OF RAIL (N), AND ANY REDIRECTIVE LENGTH IN THE RAIL END TREATMENT. A TRAVERSABLE SLOPE SHALL BE PROVIDED BEHIND THE TERMINAL TO DIMENSION "N" PRIOR TO THE OBSTRUCTION UNLESS OTHERWISE APPROVED BY THE ENGINEER.

▲ END ANCHORAGE CAN BE FLARED OR NONFLARED

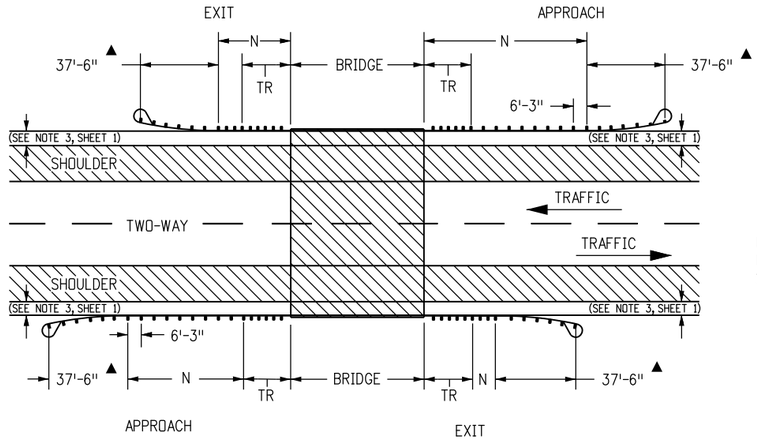


LAYOUT FOR DRIVEWAY APPROACH

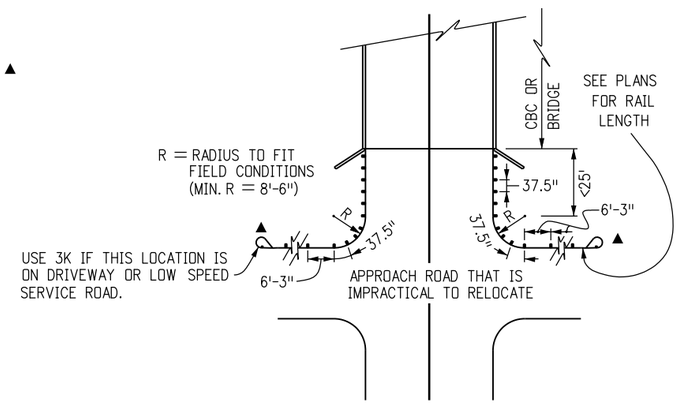


* RAIL LENGTHS ARE MINIMUM, ADDITIONAL LENGTH TO SATISFY GUARDRAIL WARRANTS SHALL BE PROVIDED

2-WAY NARROW APPLICATION



2-WAY NORMAL BRIDGE APPLICATION



GUARDRAIL TYPE 3 WITH BLOCKED OUT POSTS SPACED AT 3'-1½" FROM STRUCTURE AROUND CURVE.

INTERRUPTED STRUCTURE APPROACH

(USE TYPE 3J ON SHEET 13 WHEN PRACTICAL)

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GUARDRAIL TYPE 3 W-BEAM

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STANDARD PLAN NO.
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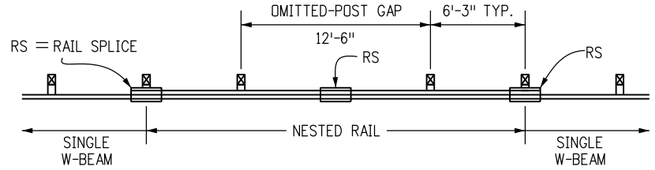
NOTES

1. FOR ONE OMITTED POST IN THE GUARDRAIL RUN, i.e. AT A PIPE CULVERT WITH MINIMUM COVER, SEE THE "NESTED RAIL AT ONE OMITTED POST" DETAIL ON THIS SHEET. THE W-BEAM RAILS SPANNING THE OMITTED-POST GAP SHALL BE DOUBLED (ONE RAIL NESTED IN THE OTHER), AND SHALL EXTEND A MINIMUM OF 6 FT.-3 IN. ON EITHER SIDE OF THE GAP. USING 12 FT.-6 IN. SECTIONS OF RAIL, AND DEPENDING ON THE SPLICE LOCATION, ONE OMITTED POST SECTION REQUIRES EITHER 25 FT. OR 37 FT. - 6 IN. OF NESTED RAIL.

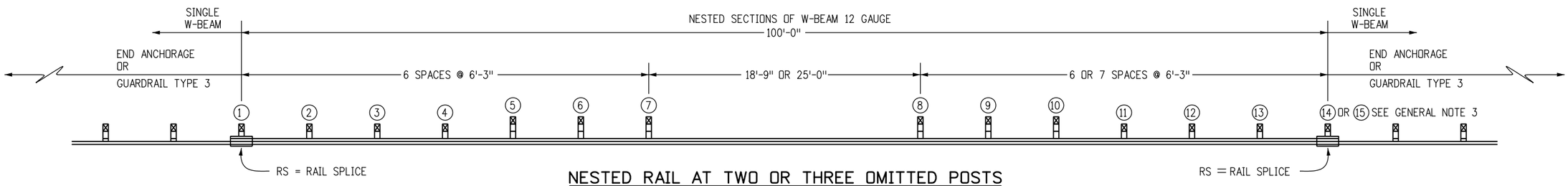
2. FOR TWO OR THREE OMITTED POSTS, SEE THE "NESTED RAIL AT TWO OR THREE OMITTED POSTS" DETAIL ON THIS SHEET. RAIL SPLICES IN THE 100 FT. NESTED SECTION MAY BE PLACED TO FACILITATE CONSTRUCTABILITY. HOWEVER ONLY ONE RAIL SPLICE MAY BE PLACED IN THE OMITTED POSTS SECTION, AND ONLY AT THE MIDPOINT OF THE 25 FT. LENGTH.

3. POST (15) REQUIRED WHEN TWO POSTS ARE OMITTED FOR THE 18 FT.-9 IN. LENGTH.

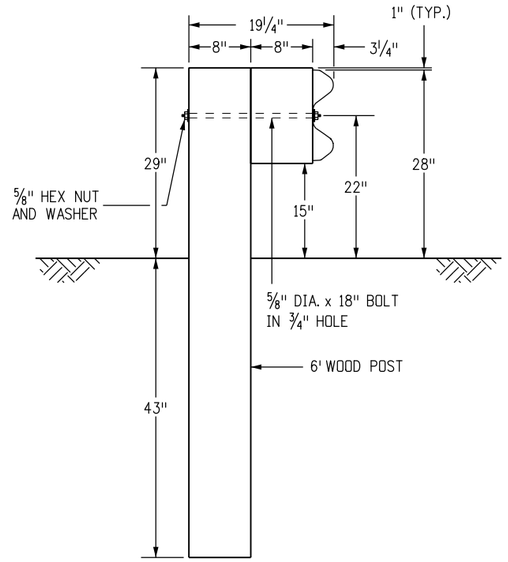
4. ONLY TIMBER POSTS AND BLOCKS ARE ALLOWED FOR WEAKENED POSTS 5 THROUGH 10.



NESTED RAIL AT ONE OMITTED POST

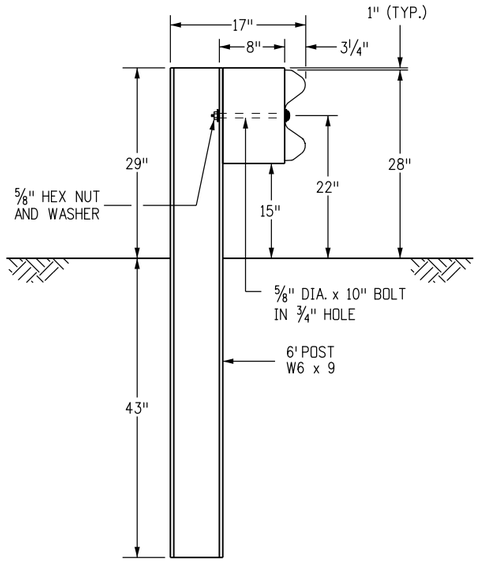


NESTED RAIL AT TWO OR THREE OMITTED POSTS



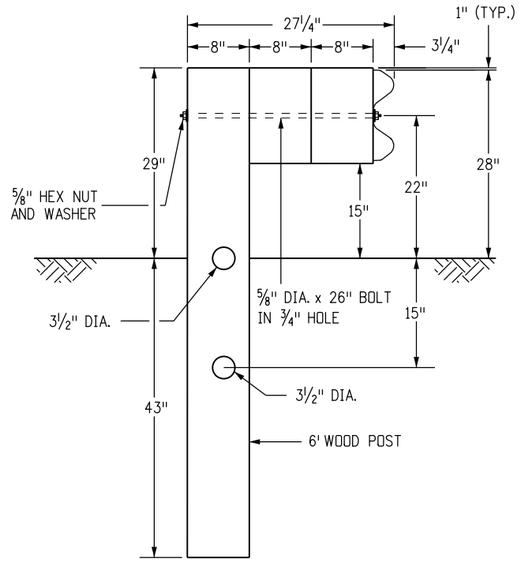
TIMBER

POSTS (1) - (4) AND (11) - (15)



STEEL

POSTS (1) - (4) AND (11) - (15)



TIMBER

POSTS (5) - (10)

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GUARDRAIL TYPE 3 W-BEAM

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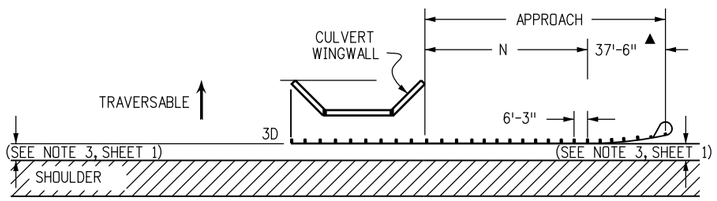
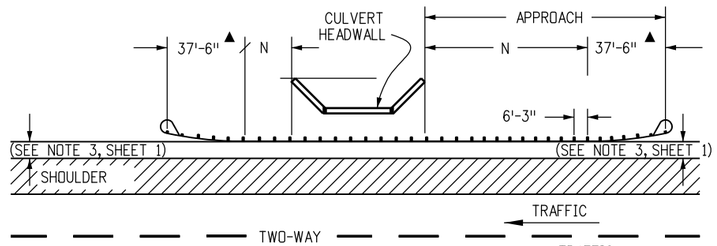
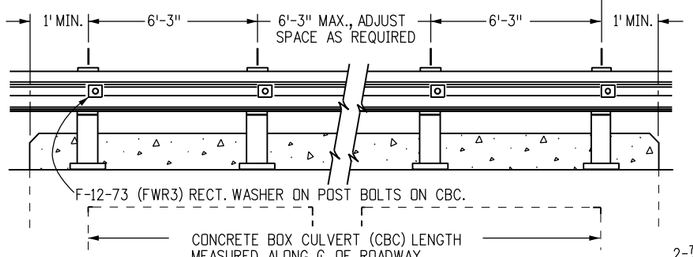
▲ END ANCHORAGE CAN BE FLARED OR NONFLARED.



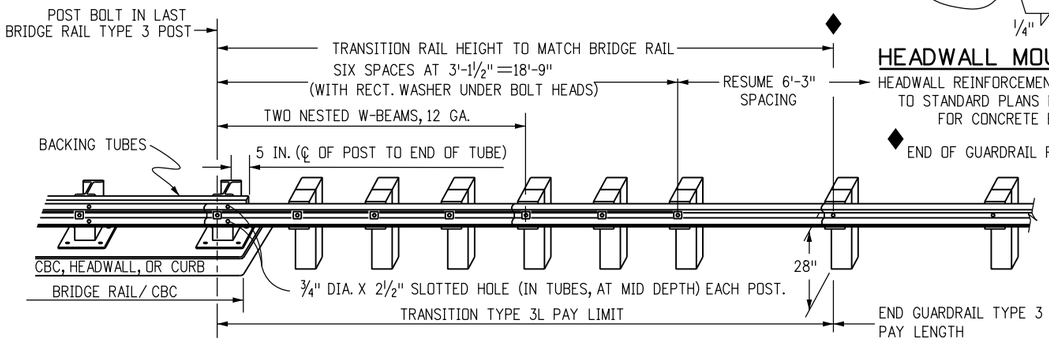


GUARDRAIL FOR CULVERTS

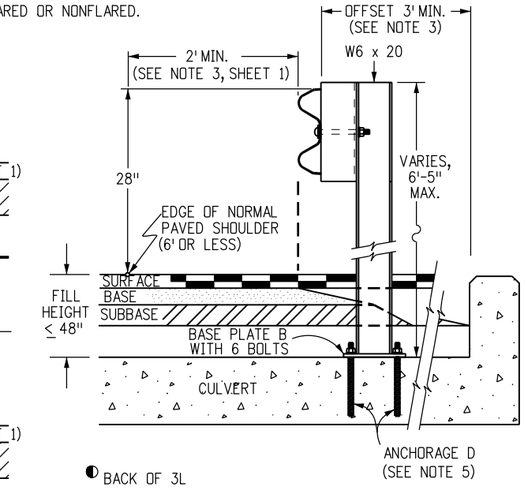


RAIL PLACEMENT FOR INSIDE OR HEADWALL MOUNT

* USE 3L TRANSITION AT BOTH APPROACH AND EXIT ENDS OF BRIDGE RAIL TYPE 3 (HEADWALL MOUNT)

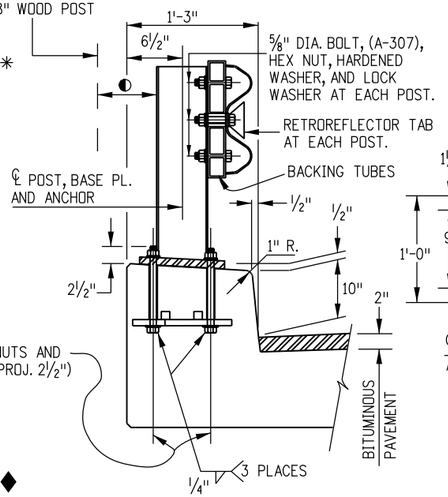


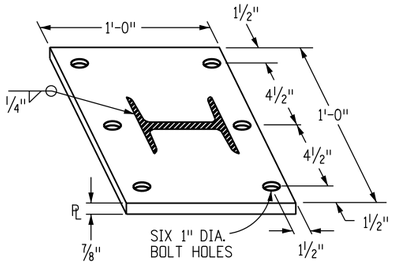
TRANSITION TYPE 3L AND GUARDRAIL TYPE 3 APPROACH



◐ BACK OF 3L TRANSITION POST 5.75" STEEL POST OR 8" WOOD POST

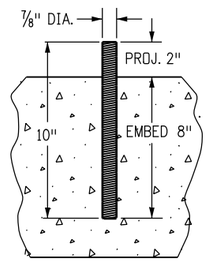
INSIDE MOUNT ON CBC





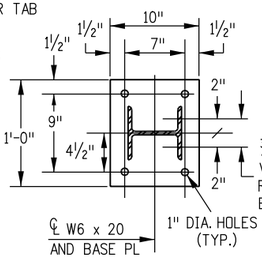
BASE PLATE B

(FOR INSIDE MOUNT)

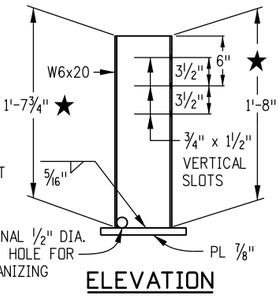


ANCHORAGE D

(FOR INSIDE MOUNT)



PLAN



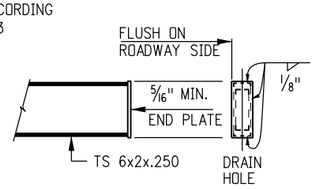
ELEVATION

HEADWALL MOUNT POST DETAIL

HEADWALL MOUNT ON CBC

HEADWALL REINFORCEMENT SHALL BE ACCORDING TO STANDARD PLANS M-601-1, 2, AND 3 FOR CONCRETE BOX CULVERTS.

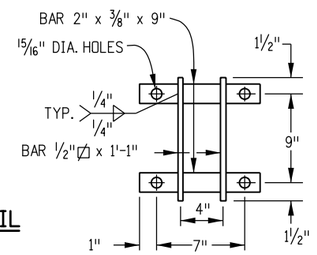
◆ END OF GUARDRAIL PAY LENGTH



BACKING TUBES END DETAIL

(FOR HEADWALL MOUNT)

TUBES SHALL BE CONTINUOUS. NEITHER BOLTED NOR WELDED SPLICES WILL BE ALLOWED.



● ANCHOR DETAIL

(FOR HEADWALL MOUNT)

NOTES

1. LOCATION AND LENGTH OF MEDIAN GUARDRAIL APPROACHES TO CULVERTS WITH FULL HEADWALL AND WINGWALLS SHALL BE AS SHOWN FOR BRIDGES ON SHEET 16. THE GUARDRAIL TYPE 3 SHALL CONTINUE ACROSS THE CULVERT AS SHOWN ON THIS SHEET.
2. RIGHT SHOULDER BOX CULVERT TREATMENT IS SHOWN ON THIS SHEET FOR CULVERTS 20 FT. OR LESS IN LENGTH.
3. GUARDRAIL ACROSS CULVERTS WITH A LENGTH OF 20 FT. OR LESS SHALL BE AS FOLLOWS:
   A. FILL HEIGHT AT GUARDRAIL POST 48 IN. OR GREATER: CONSTRUCTION AND PAYMENT WILL BE AS GUARDRAIL TYPE 3.
   B. FILL HEIGHT AT GUARDRAIL POST LESS THAN 48 IN. AND BLOCK FACE TO HEADWALL OFFSET OF 3 FT. OR GREATER: CONSTRUCTION AND PAYMENT AS GUARDRAIL TYPE 3.
   C. FILL HEIGHT AT GUARDRAIL POST 48 IN. OR LESS AND BLOCK FACE TO HEADWALL OFFSET LESS THAN 3 FT: CONSTRUCTION ACCORDING TO HEADWALL MOUNT DETAILS AND PAYMENT AS BRIDGE RAIL TYPE 3.
4. GUARDRAIL ACROSS CULVERTS WITH LENGTH GREATER THAN 20 FT. SHALL BE AS FOLLOWS:
   A. FILL HEIGHT AT GUARDRAIL POSTS 48 IN. OR GREATER: CONSTRUCTION AND PAYMENT WILL BE FOR STANDARD GUARDRAIL TYPE 3.
   B. FILL HEIGHT AT GUARDRAIL POSTS 48 IN. OR LESS: CONSTRUCTION AND PAYMENT IN ACCORDANCE WITH THE CONTRACT BRIDGE PLANS. WHEN BLOCK FACE TO HEADWALL OFFSET IS 3 FT. OR GREATER: CONSTRUCTION AND PAYMENT AS GUARDRAIL TYPE 3.
5. ANCHORAGE D: SIX BOLTS FOR BASE PLATE "B" WITH INSIDE MOUNT. THE BOLTS SHALL BE 7/8 IN. DIA X 10 IN. HIGH STRENGTH RODS THREADED FULL LENGTH AND ALL GALVANIZED. RODS SHALL BE CAST-IN-PLACE FOR A NEW STRUCTURE. FOR AN EXISTING STRUCTURE, THE RODS SHALL BE INSTALLED IN 1-1/4 IN. DIA HOLES WITH NON-SHRINK GROUT OR EPOXY CONFORMING TO ASTM C 881.
6. TYPE 3L POSTS SHALL BE STEEL OR WOOD TO MATCH POSTS USED ON THE APPROACH GUARDRAIL.
7. THE GUARDRAIL LENGTH DIMENSION "N" IS THE LENGTH AS DETERMINED BY THE LENGTH OF NEED COMPUTATION AND IS SHOWN ON THE PLANS. THE MINIMUM IS 12 FT.-6 IN. WHERE SITE CONDITIONS ALLOW. THE OVERALL REQUIRED LENGTH OF NEED CAN INCLUDE THE LENGTH OF TRANSITION, THE LENGTH OF RAIL (N), AND ANY REDIRECTIVE LENGTH IN THE RAIL END TREATMENT.
8. ALL BRIDGE RAIL TYPE 3 BACKING TUBES SHALL BE FABRICATED FROM ASTM A 500 GRADE B. ALL POSTS, BASE PLATES, AND ANCHOR BOLTS SHALL BE FABRICATED FROM ASTM A 36 STEEL. THE ABOVE MATERIAL, W-BEAM, AND ALL ANCHOR BOLTS AND MISCELLANEOUS BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SECTION 509. CONCRETE, REINFORCING STEEL, AND STRUCTURAL STEEL ELEMENTS SHALL BE IN ACCORDANCE WITH SECTIONS 601, 602, AND 509, RESPECTIVELY.
9. POST ANCHORS, ENCASED IN CONCRETE, SHALL BE ASTM A 36 STEEL, AND NEED NOT BE GALVANIZED.
10. PRIOR TO FABRICATION OF BRIDGE RAIL, THREE SETS OF WORKING DRAWINGS WHICH COMPLY WITH THE REQUIREMENTS OF SECTION 105 SHALL BE SUBMITTED TO THE ENGINEER FOR INFORMATION ONLY.
11. IF HEADWALL MOUNT GUARDRAIL IS USED, SEE STANDARD PLAN M-601, AND NOTES BELOW:
    A. ALL ITEMS ABOVE TOP OF CBC HEADWALL WILL BE MEASURED AND PAID FOR AS LINEAR FEET OF BRIDGE RAIL TYPE 3.
    B. HEADWALL MOUNTING OF RAIL WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

★ FOR STANDARD 12 IN. HEADWALL WITH NO PAVEMENT, THE POST HEIGHT SHALL BE 1 FT.- 6 IN. ADJUST POST HEIGHT FOR PAVEMENT THICKNESS.

● ONE ANCHOR ASSEMBLY SHALL BE PLACED FOR EACH RAIL POST.

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GUARDRAIL TYPE 3 W-BEAM

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STANDARD PLAN NO.

M-606-1

Sheet No. 20 of 20

GENERAL NOTES

1. ALL CONSTRUCTION ZONE TRAFFIC CONTROL DEVICES, INCLUDING BUT NOT LIMITED TO BARRICADES, SIGNS, ARROW PANELS, FLASHING BEACON (PORTABLE), AND CHANNELIZING DEVICES, SHALL BE FURNISHED, INSTALLED, MAINTAINED (INCLUDING WASHING), REPLACED IF DAMAGED, REMOVED WHEN TEMPORARILY NOT IN USE AND RETURNED WHEN REQUIRED, RESET AS NECESSARY DURING THE PROGRESS OF CONSTRUCTION, AND REMOVED ENTIRELY WHEN THE PROJECT IS COMPLETED. ALL DEVICES SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE ATSSA "QUALITY GUIDELINES FOR TEMPORARY TRAFFIC CONTROL DEVICES & FEATURES".

2. WORK ON THE PROJECT SHALL NOT BE STARTED UNTIL ALL REQUIRED TRAFFIC CONTROL DEVICES ARE IN PLACE, AND APPROVED BY THE ENGINEER.

3. WHEN SPEED LIMIT REDUCTION IS REQUIRED, SUCH REDUCTION SHALL BE IN ACCORDANCE WITH CDOT FORM 568, "AUTHORIZATION AND DECLARATION OF TEMPORARY SPEED LIMITS."

   WHEN A CHANGE IN AN EXISTING SPEED LIMIT IS REQUIRED, THE R2-1 SIGNS, SHOWN ON THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES, SHOULD BE INSTALLED AT THE LOCATIONS SHOWN ON THE TYPICAL CASES BY R2-1 (OPTIONAL) SIGNS.

   AN ADVISORY SPEED PLATE (W13-1P) MAY BE USED WITH A WARNING SIGN WHEN THE MAXIMUM RECOMMENDED SPEED FOR CONDITION NAMED IS LOWER THAN THE POSTED SPEED LIMIT.

   THE REGULATORY OR ADVISORY SPEED REDUCTION DISPLAYED SHALL NOT EXCEED 15 MPH PER SIGN INSTALLATION.

4. ANY TRAFFIC CONTROL DEVICE THAT IS DAMAGED, WEATHERED, WORN, OR OTHERWISE DEEMED UNACCEPTABLE BY THE ENGINEER, SHALL BE REPLACED.

5. CONTRACTOR AND PERSONAL VEHICLE PARKING IS PROHIBITED WITHIN THE RIGHT-OF-WAY UNLESS DESIGNATED ON THE PLANS, OR APPROVED BY THE ENGINEER.

6. CONSTRUCTION TRAFFIC SIGNS SHALL BE MEASURED BY THE FOLLOWING SIZES AND DESCRIPTIONS:

PANEL SIZE A	0.01 TO 9.00 SQ. FT. (INCLUDING TYPE 1 AND TYPE 2 BARRICADES).
PANEL SIZE B	9.01 TO 16.00 SQ. FT.
PANEL SIZE C	GREATER THAN 16 SQ. FT.

   CONSTRUCTION TRAFFIC SIGN (SPECIAL), SQ. FT., MAY BE USED FOR SOME PROJECT SPECIFIC INFORMATION SIGNS.

   FOR DETAILED DIMENSIONS OF SIGNS WITH SIGN CODE NUMBERS, SEE "STANDARD HIGHWAY SIGNS" AND THE "COLORADO SUPPLEMENT" THERETO. SIGN LAYOUTS FOR OTHER SIGNS WILL BE FURNISHED IN THE PLANS, TRANSMITTED TO THE ENGINEER AFTER AWARD, OR MAY BE AVAILABLE UPON REQUEST.

   W20-5 WARNING SIGNS SHALL BE FURNISHED WITH EXCHANGEABLE PLAQUES READING "RIGHT", "LEFT", "CENTER", "RIGHT 2", ETC. AT NO ADDITIONAL COST.

7. ALL WARNING AND REGULATORY SIGNS SHALL BE POSTED ON BOTH SIDES OF THE ROADWAY ON DIVIDED HIGHWAYS, MULTI-LANE RAMPS, ONE-WAY STREETS, AND AS DIRECTED BY THE ENGINEER, EXCEPT WHERE ONLY ONE SHOULDER IS CLOSED (EX: CASE 11 ON SHEET 7).

8. ADDITIONAL TRAFFIC CONTROL DEVICES ADDRESSING FLAGGING, SPEED REDUCTION, ETC. WILL BE NECESSARY FOR SET-UP AND TAKE-DOWN OF MOST CASE APPLICATIONS; DAILY WORK SITE ACCESS; AND PAVEMENT MARKING REMOVAL AND INSTALLATION OPERATIONS.

9. BASED ON SIGHT DISTANCE AND OTHER CONSIDERATIONS, THE FINAL LOCATIONS OF SIGNS ARE SUBJECT TO APPROVAL OF THE ENGINEER.

10. IF CONSTRUCTION RELATED TRAFFIC CONGESTION BACKS UP BEYOND THE INSTALLED ADVANCE SIGN SEQUENCE, ADDITIONAL ADVANCE SIGNING SHALL BE PLACED BEYOND THE CONGESTION.

11. ALL SIGN MATERIAL SHALL BE SOUND AND DURABLE TO THE DEGREE NECESSARY FOR MAINTAINING EFFECTIVE AND NEAT APPEARING TRAFFIC CONTROLS, AND:

    a. SIGN PANELS MAY BE FABRICATED FROM PLYWOOD, STEEL, ALUMINUM, OR OTHER SUITABLE MATERIAL.
    b. REFLECTIVE SHEETING SHALL CONFORM TO ASTM D4956. THE TYPE SHALL BE AS DESCRIBED IN THE STANDARD SPECIFICATIONS AND/OR AS SHOWN ON THE PLANS.
    c. SYMBOLS AND LEGEND SHALL BE OF GOOD WORKMANSHIP (UNEVEN OR HAND LETTERING WILL NOT BE ACCEPTED).
    d. PORTABLE OR TEMPORARY MOUNTING SHALL NOT BE CONSTRUCTED OR WEIGHTED BY ANY METHOD OR MATERIAL THAT MAKES THEM HAZARDOUS TO TRAFFIC.
    e. CERTAIN POST SIZES AND SHAPES REQUIRE A "BREAK-AWAY" DEVICE. SEE THE APPLICABLE STANDARD PLAN. OTHER POST DESIGNS OR SYSTEMS REQUIRE THE SUBMITTAL OF AN FHWA LETTER OF ACCEPTANCE TO THE ENGINEER, AND MUST BE APPROVED BY THE ENGINEER PRIOR TO THEIR USE.

12. ALL CONSTRUCTION SIGN PLACEMENT SHALL BE IN ACCORDANCE WITH STANDARD PLAN "TYPICAL GROUND SIGN PLACEMENT" UNLESS OTHERWISE APPROVED.

    SIGNS APPROVED TO BE MOUNTED ON PORTABLE SUPPORTS, OR APPROPRIATE SIGNS MOUNTED ON BARRICADES, MAY BE AT LOWER HEIGHTS, BUT THE BOTTOM OF THE SIGNS SHALL NOT BE LESS THAN ONE FOOT ABOVE THE PAVEMENT ELEVATION.

13. SIGNS MOUNTED ON THE MEDIAN OF DIVIDED HIGHWAYS WHERE MEDIAN BARRIER IS IN PLACE MAY BE MOUNTED ON THE BARRIER WITH A SADDLE TYPE BRACKET. IF THE BRACKET ALLOWS THE SIGN PANEL TO BE TURNED PARALLEL TO THE ROADWAY, THE SIGN MAY REMAIN IN PLACE WHEN NOT APPLICABLE, BUT LAYING THE SIGN PANEL DOWN IN A HORIZONTAL POSITION IS NOT PERMITTED.

14. TRAFFIC CONES SHALL BE AT LEAST 28 INCHES IN HEIGHT. HOWEVER, THE MINIMUM SIZE SHALL BE 36 INCHES WHEN THEY ARE USED ON FREEWAYS AND EXPRESSWAYS, OR DURING NIGHT TIME WORKING HOURS. THEY SHOULD ALSO BE 36 INCHES WHEN USED ON OTHER HIGH SPEED ROADWAYS (45 MPH OR MORE) WITH AN ADT OF 6,000 OR MORE.

15. TYPE 1 BARRICADES SHALL NOT BE USED ON FREEWAYS, EXPRESSWAYS, OR OTHER HIGH SPEED ROADWAYS (55 MPH OR MORE).

16. WHEN TWO-WAY TRAFFIC IS PLACED ON ONE ROADWAY OF A NORMALLY DIVIDED HIGHWAY, OPPOSING TRAFFIC SHALL BE SEPARATED EITHER WITH CONCRETE BARRIER (TEMPORARY), OR WITH CHANNELIZING DEVICES APPROVED FOR THIS APPLICATION, THROUGHOUT THE LENGTH OF TWO-WAY OPERATION. THE TRANSITION ZONES SHALL HAVE CONCRETE BARRIER (TEMPORARY). THE BARRIER SHALL BE TIED TO AN EXISTING STRUCTURE OR GUARD RAIL, FLARED OR EXTENDED, TO MEET CLEAR ZONE REQUIREMENTS, OR FITTED WITH AN IMPACT ATTENUATION DEVICE.

17. CHANNELIZING DEVICE SPACING, IN FEET, SHALL BE AS FOLLOWS:
    a. FOR TAPERS AND TRANSITIONS, SPACING EQUALS THE NUMERICAL VALUE OF THE SPEED LIMIT. (e.g. 45 MPH = 45 FEET)
    b. FOR TANGENTS ALONG THE BUFFER SPACE OR WORK AREA, SPACING MAY NOT BE GREATER THAN TWO TIMES THE SPEED LIMIT. (e.g. 50 MPH = 50 FEET TO 100 FEET MAXIMUM)

18. FOR DETAILS ON BARRICADES, CONCRETE BARRIER (TEMPORARY), VERTICAL PANELS, AND FLASHING BEACON (PORTABLE), SEE THE APPLICABLE STANDARD PLANS.

19. FLOOD LIGHTS SHALL BE USED TO ILLUMINATE FLAGGER STATIONS DURING THE HOURS OF DARKNESS UNLESS OTHERWISE APPROVED. A TYPICAL LIGHT SHOULD PROVIDE THE FOLLOWING: A FULLY DIRECTIONAL SWIVEL MOUNT QUARTZ LIGHT SOURCE (500 WATT MINIMUM), SELF-SUPPORTING STAND WITH VARIABLE LIGHT HEIGHT FROM A MINIMUM OF EIGHT FEET ABOVE THE ROADWAY, AND A POWER SOURCE. IT SHALL ILLUMINATE THE STATION AREA AND A FLAGGER ESCAPE PATH, BUT SHALL NOT PRESENT ANY GLARE TO TRAFFIC.

20. FOR TEMPORARY PAVEMENT MARKINGS AND CONTROL POINTS FOR INSTALLING THOSE PAVEMENT MARKINGS FOR UNDIVIDED ROADWAYS THAT ARE BEING CONSTRUCTED UNDER TRAFFIC, FULL COMPLIANCE CENTER LINE, LANE LINE, AND EDGE LINE TEMPORARY MARKINGS SHALL BE IN PLACE AT THE END OF EACH WORK DAY IN ACCORDANCE WITH SECTION 627.03(d)2.

    FOR ADDITIONAL PAVEMENT MARKING DETAILS, SEE STANDARD PLAN "TYPICAL PAVEMENT MARKINGS".

21. BUFFER SPACE IS OPTIONAL. NEED MUST BE DETERMINED ON A PROJECT OR SITE SPECIFIC BASIS AS DIRECTED BY THE ENGINEER. WHEN A BUFFER SPACE IS USED, DIMENSIONS AND/OR DEVICES USED ARE TO BE INCORPORATED IN THE TRAFFIC CONTROL PLAN (TCP) OR THE CONTRACTOR'S METHOD OF HANDLING TRAFFIC (MHT).

22. ADDITIONAL VMS SIGNAGE SHOULD BE CONSIDERED AT LEAST A MILE IN ADVANCE OF THE SIGNING SHOWN IN THE DETAIL FOR ANY LANE CLOSURES ON INTERSTATE AND OTHER HIGH SPEED FACILITIES ESPECIALLY WHEN THE LEVEL OF SERVICE IS SIGNIFICANTLY REDUCED AS A RESULT OF CONSTRUCTION. THE LEGENDS SHOULD BE CHANGED TO ADVISE MOTORISTS OF UPCOMING TRAFFIC CONDITIONS AND TO ALERT THEM OF UPCOMING LANE USAGE.

    ADDITIONAL ADVANCE WARNING SIGNAGE IS ENCOURAGED IN ALL CASES WHERE TRAFFIC VOLUMES AND SPEEDS ARE HIGH AND/OR WHERE THERE ARE INFREQUENT EXITS. ADDITIONAL SIGNAGE IS ALSO ENCOURAGED IN LOCATIONS WHERE DRIVERS' LINE OF SIGHT TO ADVANCE WARNING SIGNS IS OBSTRUCTED.

23. WHEN ARROW BOARDS ARE USED TO CLOSE MULTIPLE LANES, A SEPARATE ARROW BOARD SHALL BE USED FOR EACH CLOSED LANE.

    IF ARROW BOARDS ARE USED FOR SHOULDER WORK, BLOCKING THE SHOULDER, FOR ROADSIDE WORK NEAR THE SHOULDER, OR FOR TEMPORARILY CLOSING ONE LANE ON A TWO-LANE, TWO-WAY ROADWAY, USE THE ARROW BOARDS ONLY IN THE CAUTION MODE.

24. RAISED PAVEMENT MARKERS MAY BE USED TO SUPPLEMENT TEMPORARY STRIPING DURING NON-SNOW PERIODS. THEIR USE IS ENCOURAGED ON HIGHER SPEED FACILITIES WHEN TRAFFIC IS BEING DIVERTED FROM ITS USUAL COURSE.

25. THE TYPICAL CASES DEPICTED IN THIS STANDARD REFLECT THE MINIMUM REQUIREMENTS, UNLESS AS OTHERWISE DIRECTED BY THE PROJECT PLANS AND SPECIFICATIONS, AND/OR THE PROJECT ENGINEER.

26. A SIGNIFICANT PROJECT IS DEFINED AS ONE THAT, ALONE OR IN COMBINATION WITH OTHER CONCURRENT PROJECTS NEARBY, IS ANTICIPATED TO CAUSE SUSTAINED WORK ZONE IMPACTS AT A LOCATION FOR THREE OR MORE CONSECUTIVE DAYS WITH EITHER INTERMITTENT OR CONTINUOUS LANE CLOSURES.

Sheet Revisions

	Date:	Comments
R-1	02/06/13	SHEET 13 - UPDATE TO 2009 MUTCD STD
R-2	02/26/13	SHEET 1 - UPDATE TO NOTE 1
R-3	02/27/13	SHEET 4 - UPDATE TAPER TO MUTCD STD
R-4	07/26/13	SHTS 9, 10, 15 & 20 - CORRECTED SIGN CODE DESIGNATION
R-5	**03/27/14**	SHTS 17 & 18 - UPDATED SIGNS AND TMA'S
R-6	**07/22/14**	SHEET 1 - UPDATE TO NOTE 20
R-7	**12/8/14**	SHEETS 17 TO 24 - ADDED AND RENUMBERED SHEET 22 - SIGN CODE UPDATE, W5-4D & W21-5a

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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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INDEX TO TYPICAL WORK ZONE CASES

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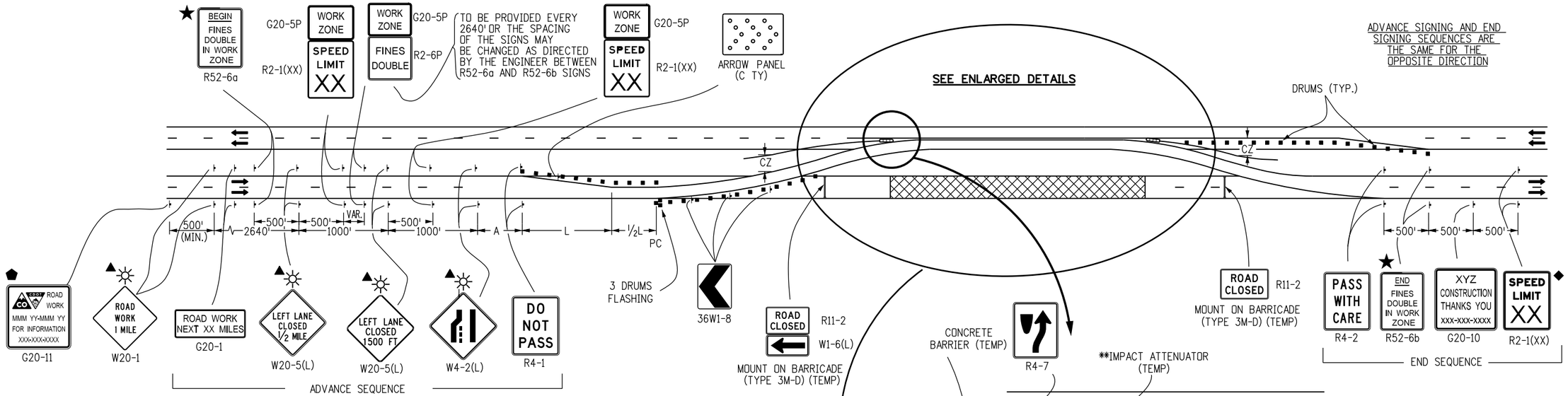
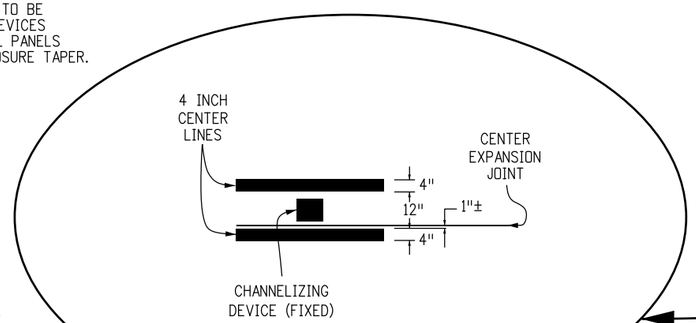


TYPICAL 2-WAY ZONE STRIPING

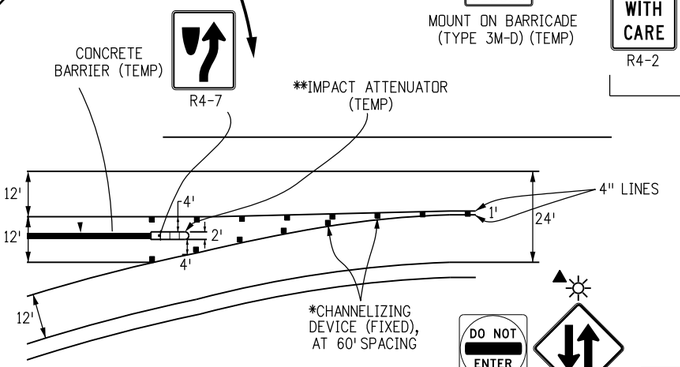
LEGEND

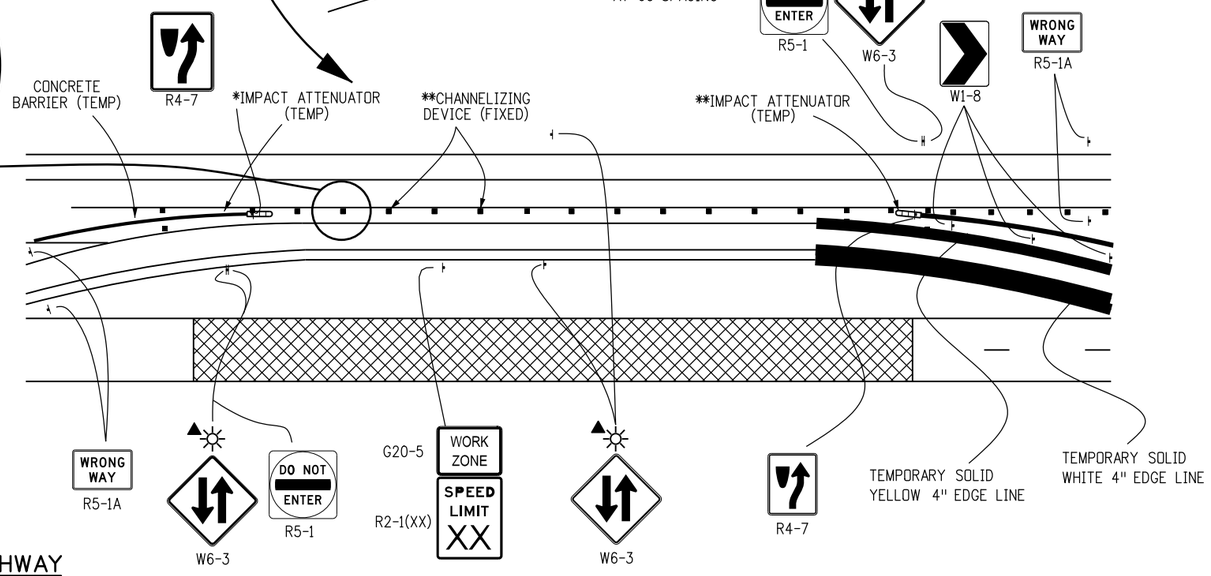
- ▪ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- DIRECTION OF TRAVEL
- WORK AREA
- L TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: $L = S \times W$
  - SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- A = 100' (URBAN LOW SPEED)
  - 350' (URBAN HIGH SPEED)
  - 500' (RURAL)
  - 1,000' (EXPRESSWAY / FREEWAY)
- CZ CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- VAR. BUFFER SPACE (SEE GENERAL NOTE 21 ON SHEET 1).
- IMPACT ATTENUATOR AS DETAILED ON THE PLANS
- FLASHING BEACON



TYPICAL 2-WAY ZONE STRIPING

- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- * THESE ITEMS ARE NOT REQUIRED WHEN CONTINUOUS CONCRETE BARRIER IS USED FOR CHANNELIZATION.
- ** SEE GENERAL NOTE 16 ON SHEET 1.
- ⬟ G20-11 SIGN IS REQUIRED IF SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.





CASE NO. 1
TYPICAL APPLICATION
CLOSURE OF ONE ROADWAY 4-LANE DIVIDED HIGHWAY

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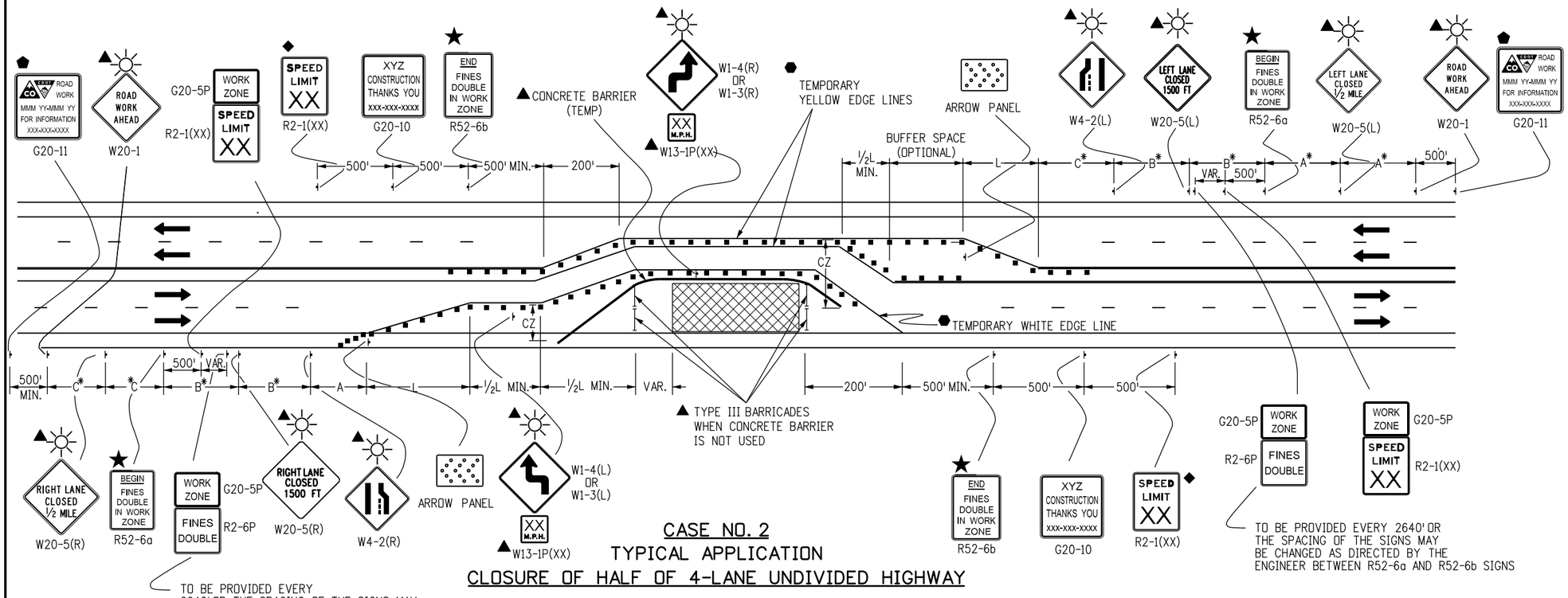
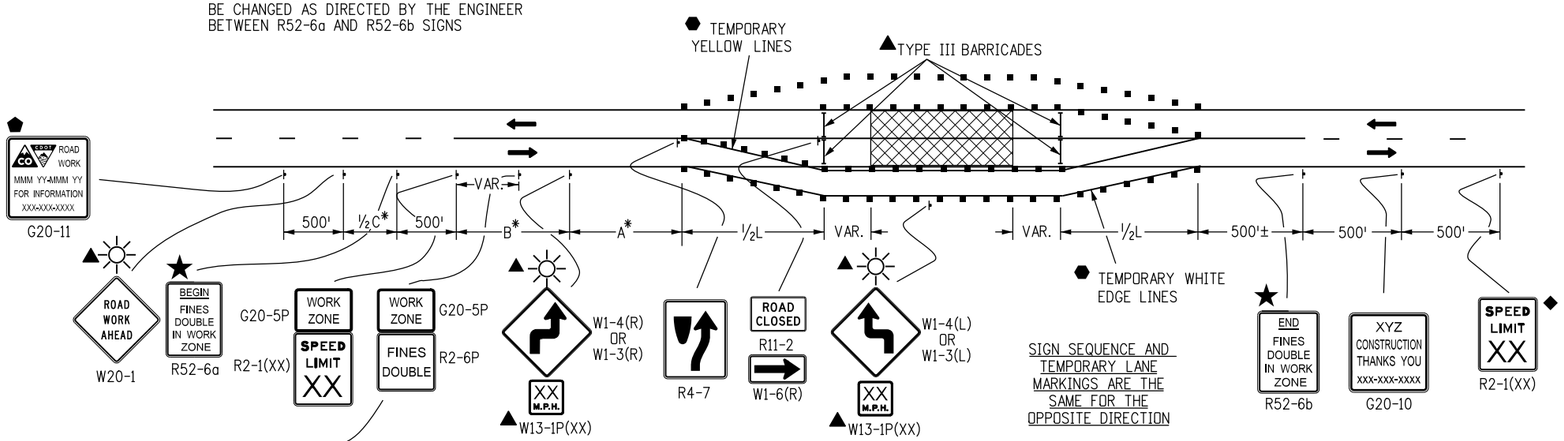


CASE NO. 2
TYPICAL APPLICATION
CLOSURE OF HALF OF 4-LANE UNDIVIDED HIGHWAY



CASE NO. 3
TYPICAL APPLICATION
ROAD CLOSURE, USE OF ADJACENT SHOULDERS

LEGEND

- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- FLAGGER
- DIRECTION OF TRAVEL
- WORK AREA

L TRANSITION TAPER LENGTH:

L = MINIMUM LENGTH OF TAPER

SPEED 45 MPH OR MORE: $L = S \times W$

SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$

S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

W = WIDTH OF OFFSET

SHOULDER TAPER = 1/3 L

- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.

A = 100' (URBAN LOW SPEED)
350' (URBAN HIGH SPEED)
500' (RURAL)
1,000' (EXPRESSWAY / FREEWAY)

CZ CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1)

▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.

◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.

VAR. BUFFER SPACE (SEE GENERAL NOTE 21 ON SHEET 1).

⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.

⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.

- FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

* KEY TO ADVANCE SIGNING DISTANCES

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<=40 MPH)	100	100	100
URBAN (>=45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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R-X		
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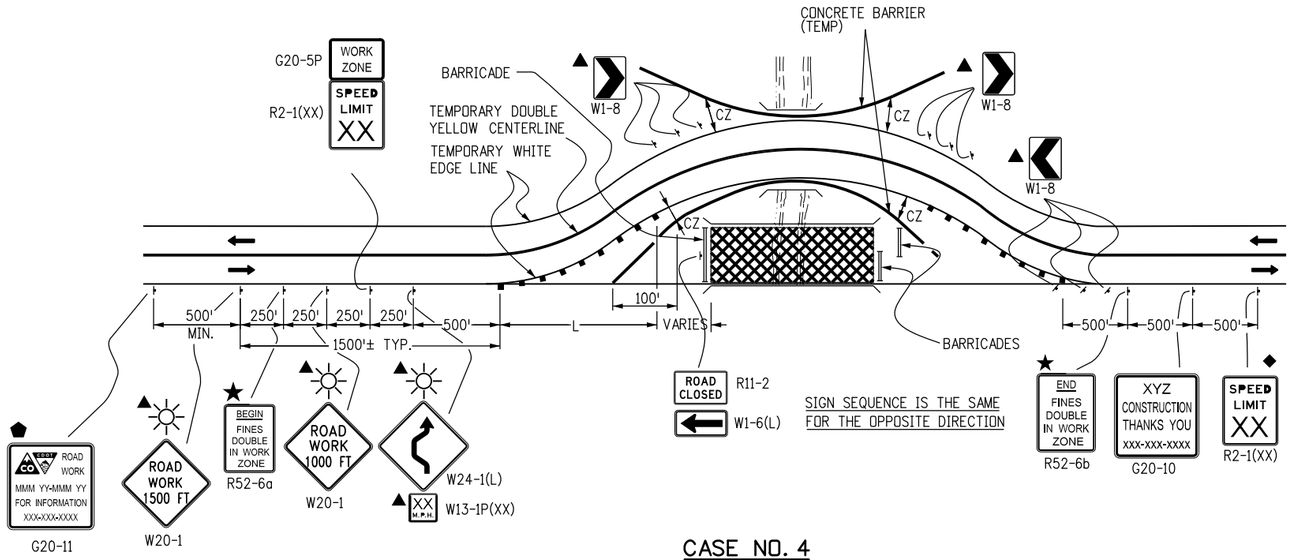
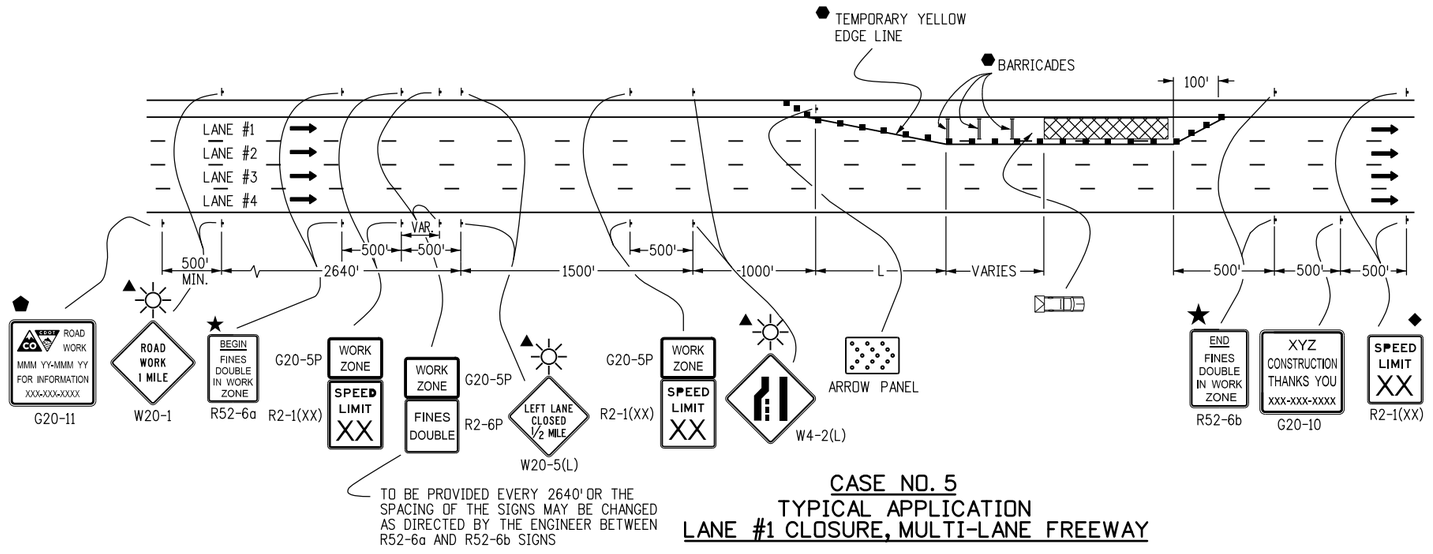


CASE NO. 4
TYPICAL APPLICATION
ROAD CLOSURE, BYPASS DETOUR PROVIDED



TO BE PROVIDED EVERY 2640' OR THE SPACING OF THE SIGNS MAY BE CHANGED AS DIRECTED BY THE ENGINEER BETWEEN R52-6a AND R52-6b SIGNS

CASE NO. 5
TYPICAL APPLICATION
LANE #1 CLOSURE, MULTI-LANE FREEWAY

LEGEND

- ▪ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- DIRECTION OF TRAVEL
- WORK AREA
- L — TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: $L = S \times W$
  - SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
  - SHOULDER TAPER = 1/3 L
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ — CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- VARIES — BUFFER SPACE (SEE GENERAL NOTE 21 ON SHEET 1).
- ⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- TRUCK MOUNTED ATTENUATOR (TMA)
- FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

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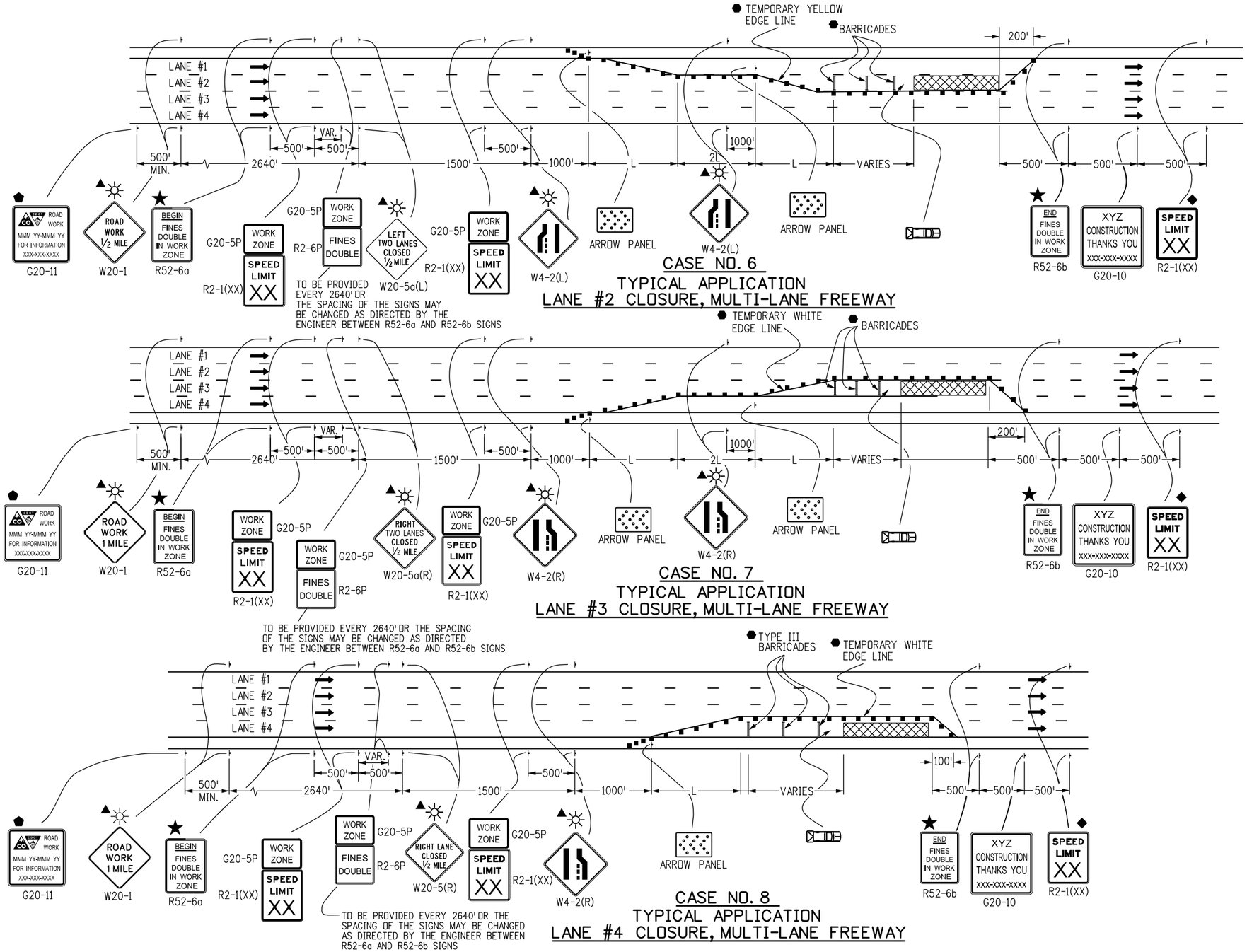

CASE NO. 6
TYPICAL APPLICATION
LANE #2 CLOSURE, MULTI-LANE FREEWAY

CASE NO. 7
TYPICAL APPLICATION
LANE #3 CLOSURE, MULTI-LANE FREEWAY

CASE NO. 8
TYPICAL APPLICATION
LANE #4 CLOSURE, MULTI-LANE FREEWAY

LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- DIRECTION OF TRAVEL
- WORK AREA
- L TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: $L = S \times W$
  - SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
  - SHOULDER TAPER = 1/3 L
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- VARIES BUFFER SPACE (SEE GENERAL NOTE 21 ON SHEET 1).
- ⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- TRUCK MOUNTED ATTENUATOR (TMA)
- FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: RRR		Date:	Comments
Last Modification Date: Initials:	R-X		
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans	R-X		
Drawing File Name: S-630-01_6of24.dgn	R-X		
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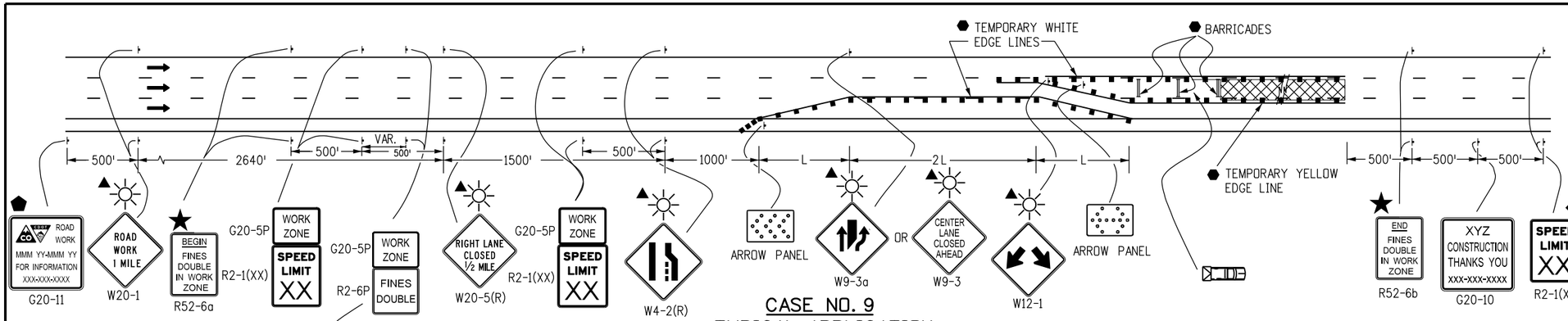
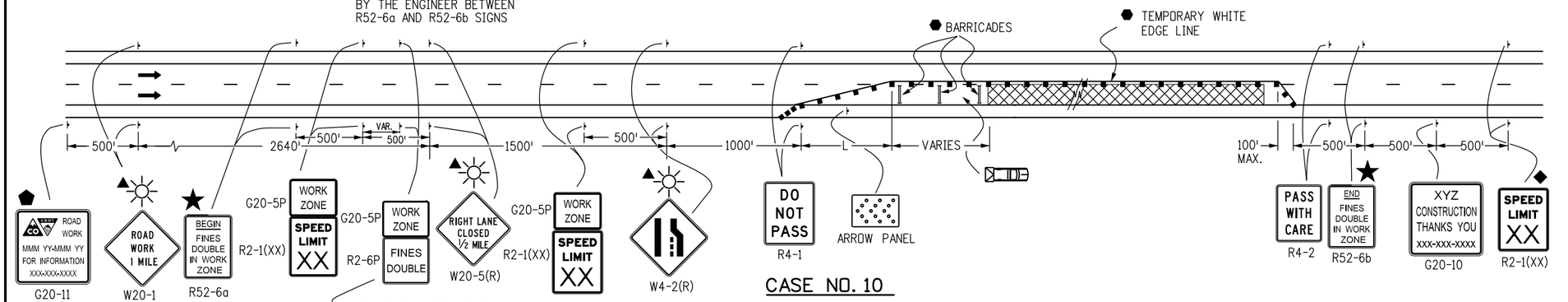
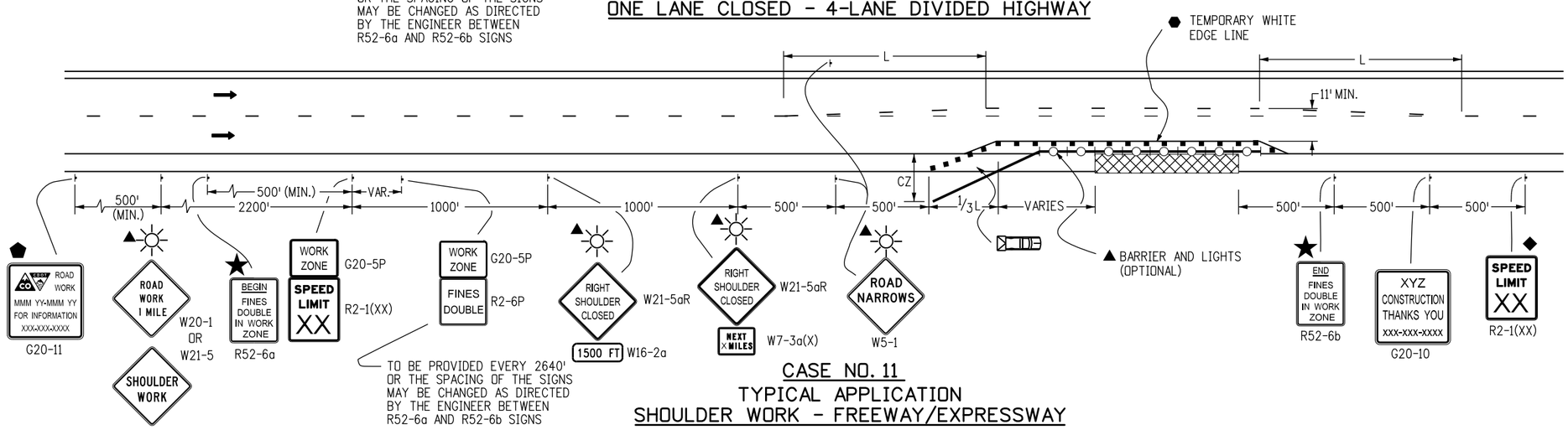


CASE NO. 9
TYPICAL APPLICATION
CENTER LANE CLOSURE - MULTI-LANE FREEWAY



CASE NO. 10
TYPICAL APPLICATION
ONE LANE CLOSED - 4-LANE DIVIDED HIGHWAY



CASE NO. 11
TYPICAL APPLICATION
SHOULDER WORK - FREEWAY/EXPRESSWAY

LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- DIRECTION OF TRAVEL
- WORK AREA
- L — TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: L = S x W
  - SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
  - SHOULDER TAPER = 1/3 L
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ — CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- FLASHING BEACON
- VARIES — BUFFER SPACE (SEE GENERAL NOTE 21 ON SHEET 1).
- ⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- TRUCK MOUNTED ATTENUATOR (TMA)
- CONCRETE BARRIER (TEMPORARY) WITH LIGHTS
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

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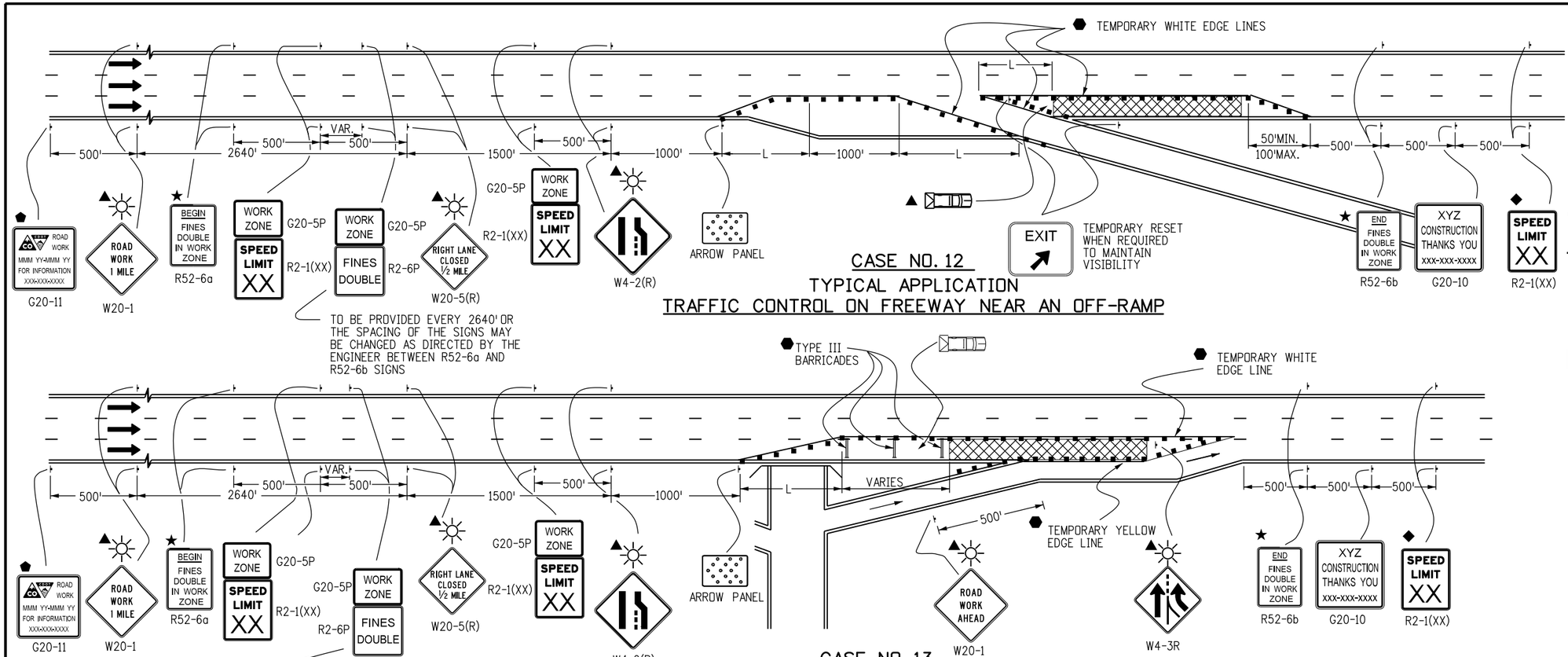
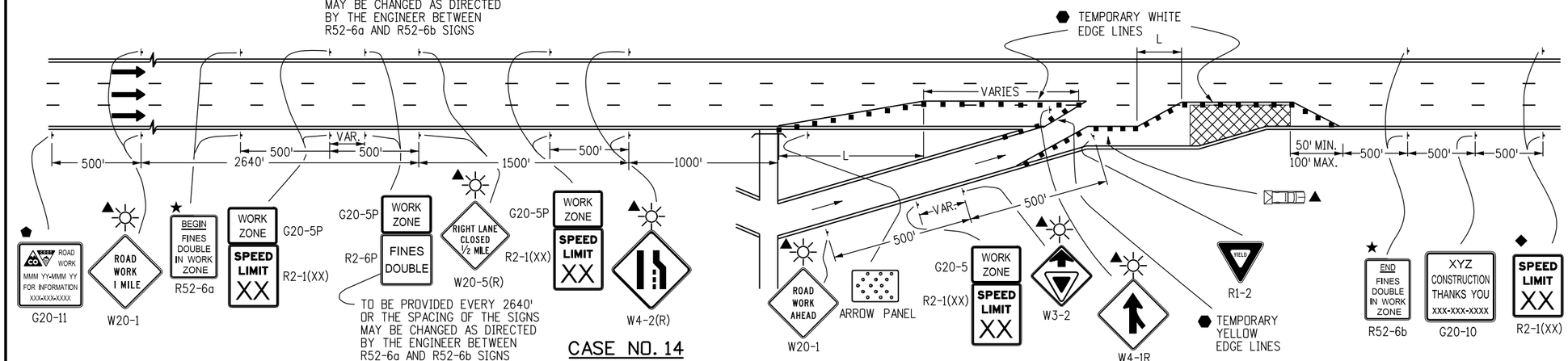


CASE NO. 12
TYPICAL APPLICATION
TRAFFIC CONTROL ON FREEWAY NEAR AN OFF-RAMP

CASE NO. 13
TYPICAL APPLICATION - TRAFFIC CONTROL ON FREEWAY BEFORE AN ON-RAMP



CASE NO. 14
TYPICAL APPLICATION - TRAFFIC CONTROL ON FREEWAY ALLOWING ACCESS FROM ON-RAMP

LEGEND

- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- DIRECTION OF TRAVEL
- WORK AREA

L — TRANSITION TAPER LENGTH:

L = MINIMUM LENGTH OF TAPER

SPEED 45 MPH OR MORE: $L = S \times W$

SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$

S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

W = WIDTH OF OFFSET

SHOULDER TAPER = 1/3 L

- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ — CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- VARIES — BUFFER SPACE (SEE GENERAL NOTE 21).
- ⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- TRUCK MOUNTED ATTENUATOR (TMA)
- FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

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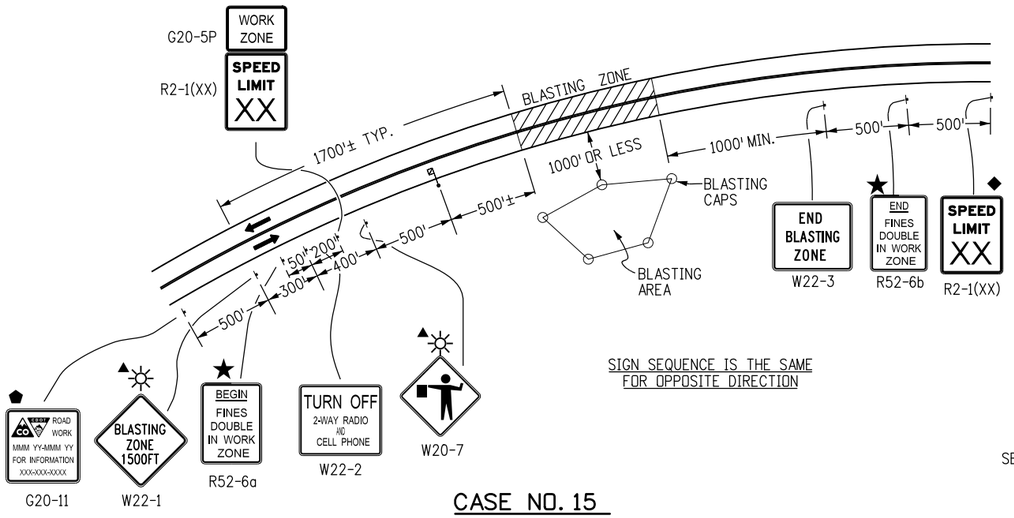
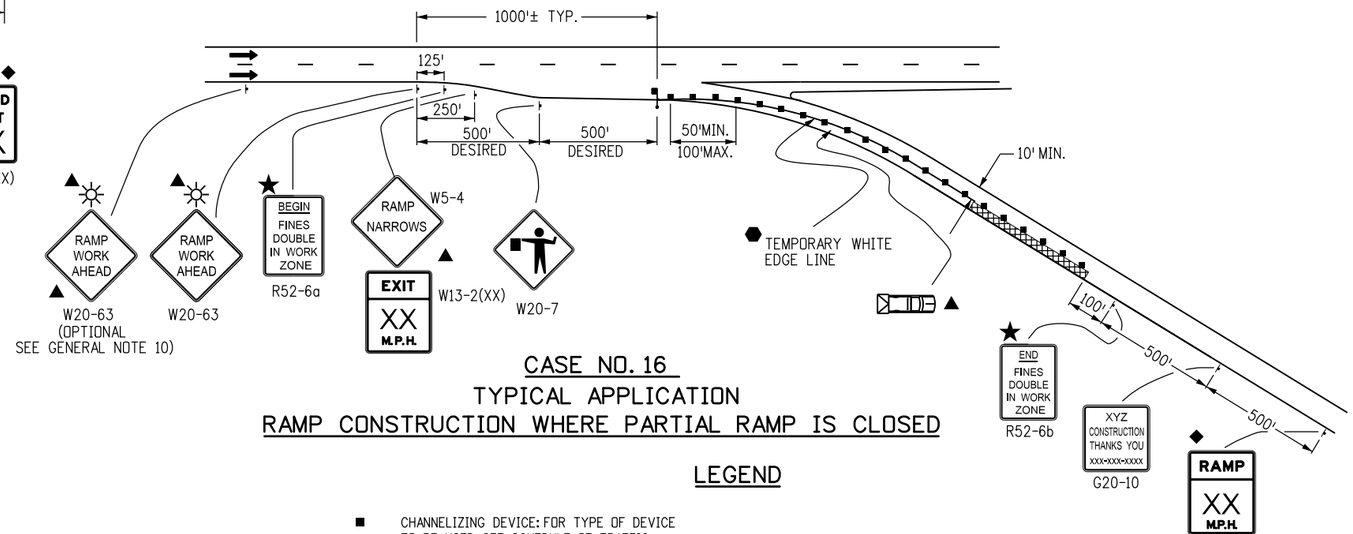
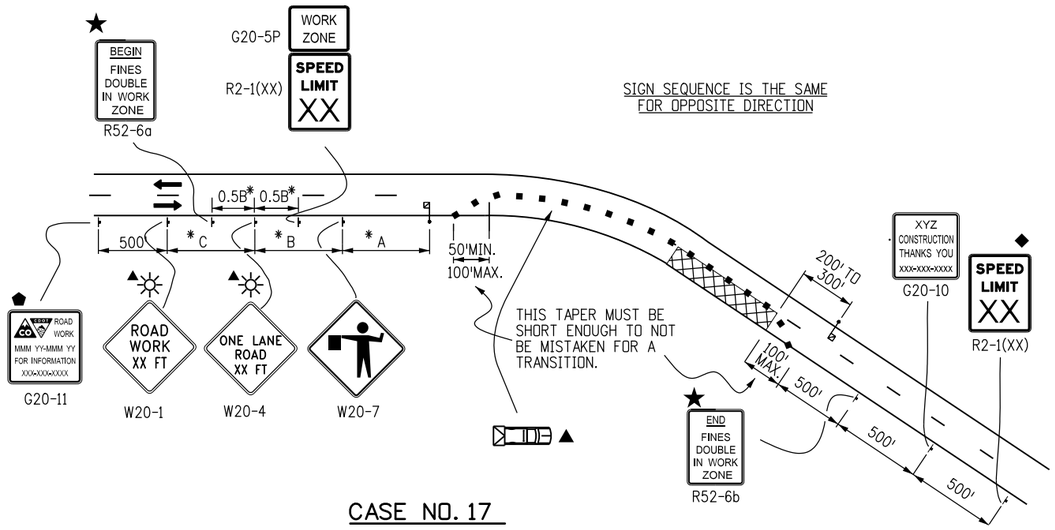


SIGN SEQUENCE IS THE SAME FOR OPPOSITE DIRECTION

CASE NO. 15
TYPICAL APPLICATION
BLASTING ZONE



CASE NO. 16
TYPICAL APPLICATION
RAMP CONSTRUCTION WHERE PARTIAL RAMP IS CLOSED



SIGN SEQUENCE IS THE SAME FOR OPPOSITE DIRECTION

CASE NO. 17
TYPICAL APPLICATION
LANE CLOSURE, 2-LANE HIGHWAY, AT CURVE

LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- DIRECTION OF TRAVEL
- WORK AREA
- L TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: $L = S \times W$
  - SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
  - SHOULDER TAPER = 1/3 L
- TRUCK MOUNTED ATTENUATOR (TMA)
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- FLASHING BEACON
- ⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.

*KEY TO ADVANCE SIGNING DISTANCES

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (>= 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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Last Modification Date: 07/26/13	Initials: KEN	R-4
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Drawing File Name: S-630-01_9of24.dgn		R-X
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Sheet Revisions	
Date:	Comments
07/26/13	CORRECTED SIGN CODE DESIGNATION FOR FLAGGER (SYMBOL) SIGN TO W20-7

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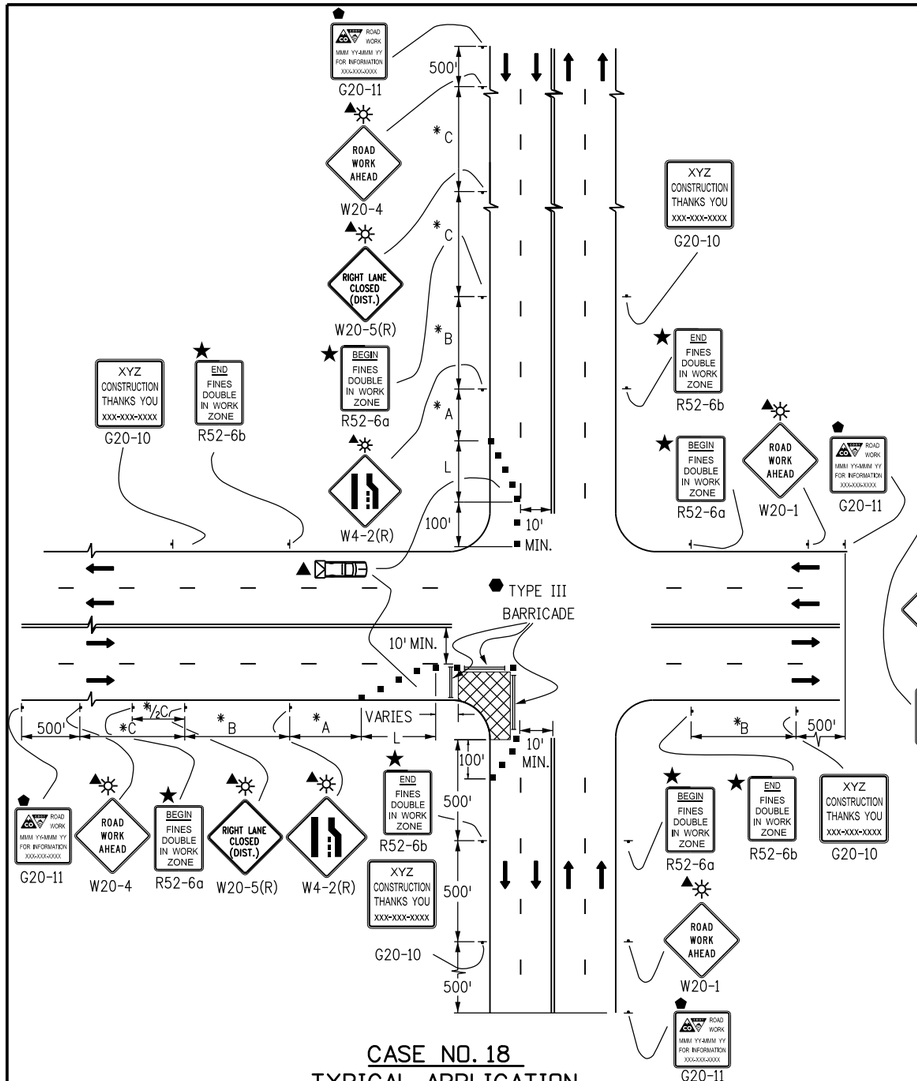
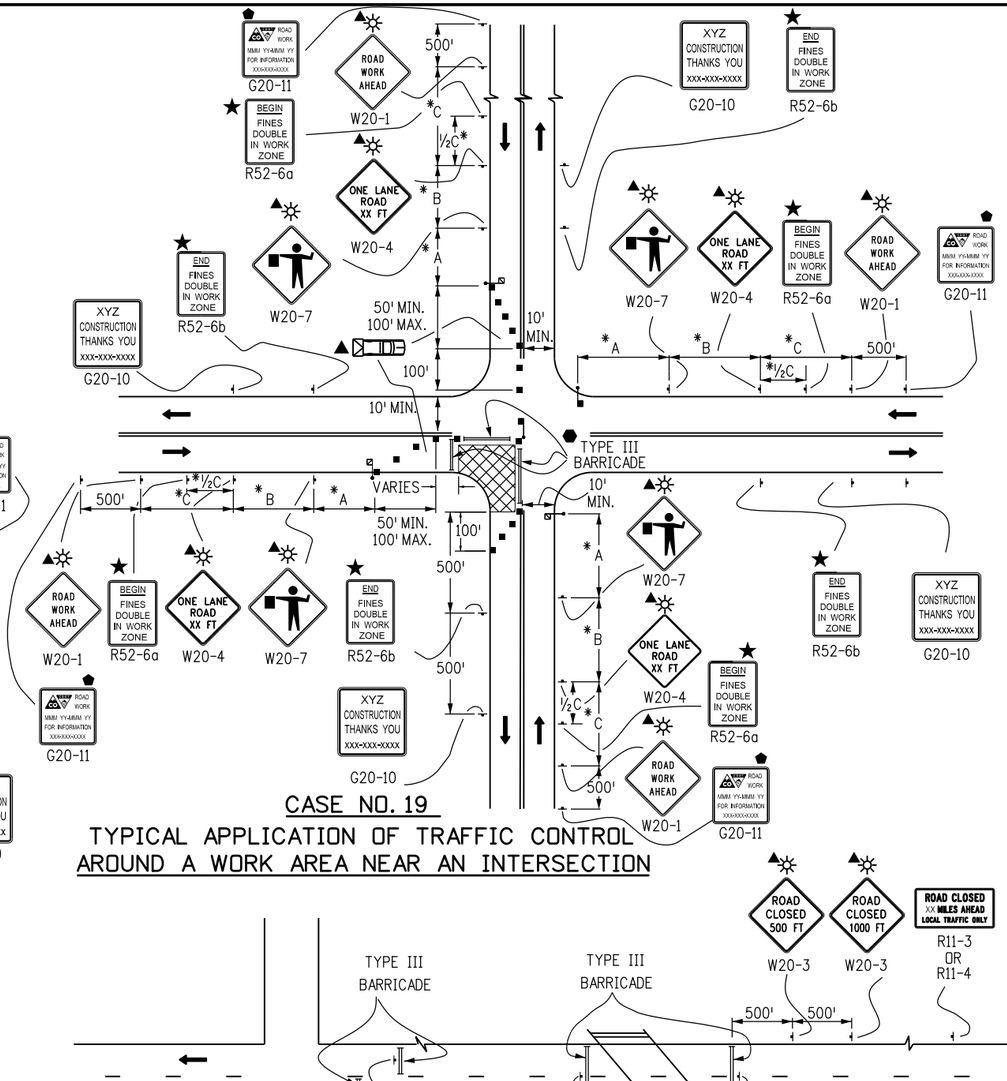


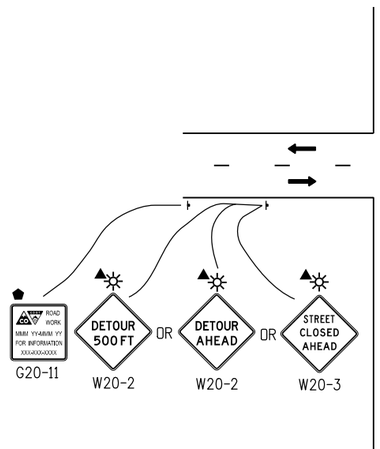
CASE NO. 18
TYPICAL APPLICATION TRAFFIC CONTROL AROUND A WORK AREA NEAR AN INTERSECTION, ONE LANE CLOSED

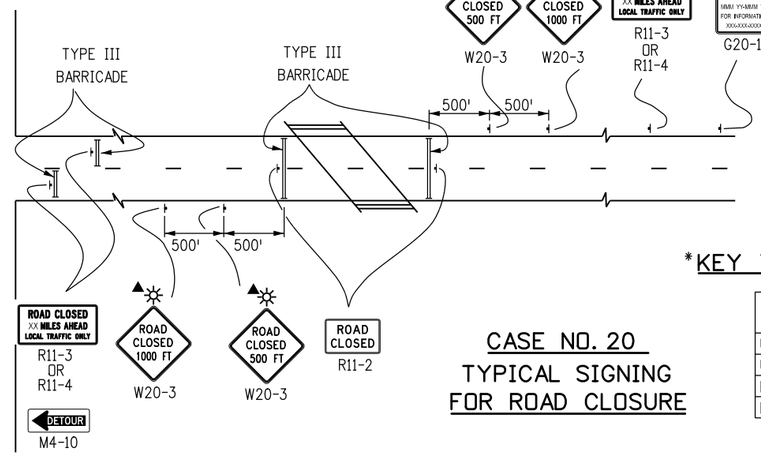


CASE NO. 19
TYPICAL APPLICATION OF TRAFFIC CONTROL AROUND A WORK AREA NEAR AN INTERSECTION

NOTES:

1. SIGN PLACEMENT SHOWN ON CASES 18 AND 19 TYPIFIES RURAL APPLICATIONS. URBAN APPLICATIONS REQUIRE THE SIGNS TO BE PLACED WITHIN ONE, OR PERHAPS TWO, BLOCKS.
2. TRUCK-MOUNTED ATTENUATORS (TMA) OPTIONAL FOR ALL CASES AS DETERMINED BY THE ENGINEER.





CASE NO. 20
TYPICAL SIGNING FOR ROAD CLOSURE

LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- ■→ FLAGGER
- DIRECTION OF TRAVEL
- WORK AREA
- L TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: L = S x W
  - SPEED 40 MPH OR LESS: L = $\frac{WS^2}{60}$
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
  - SHOULDER TAPER = 1/3 L
- TRUCK MOUNTED ATTENUATOR (TMA)
- CZ CLEAR ZONE (SEE GENERAL NOTE 16).
- FLASHING BEACON
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- VARIES BUFFER SPACE (SEE GENERAL NOTE 21 ON SHEET 1).
- ⬟ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.

*KEY TO ADVANCE SIGNING DISTANCES

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (>= 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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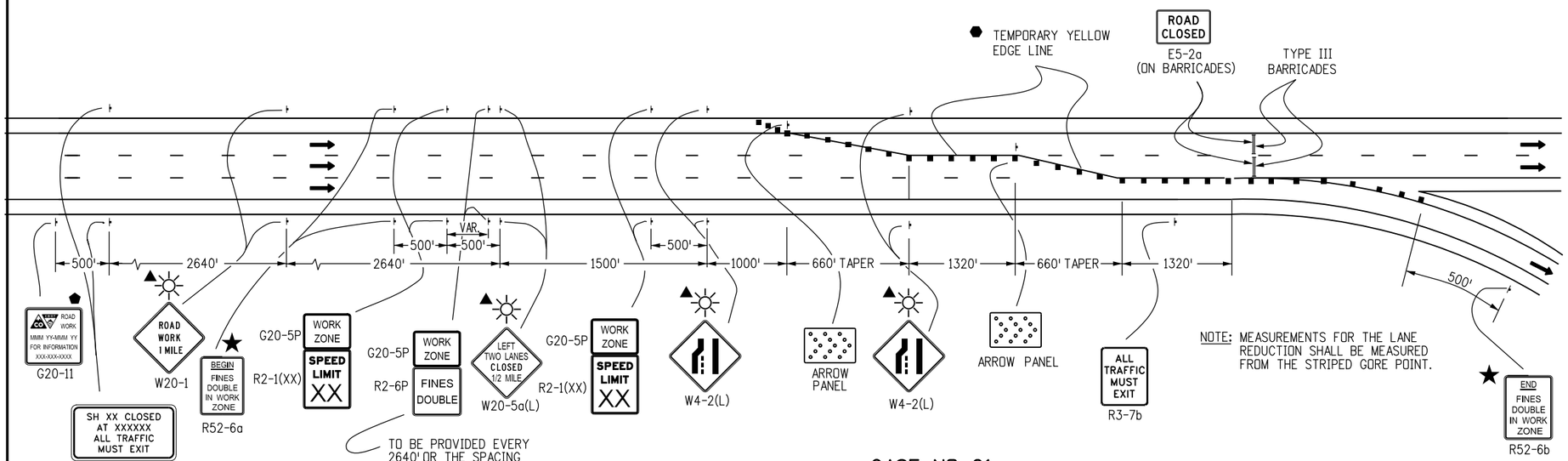
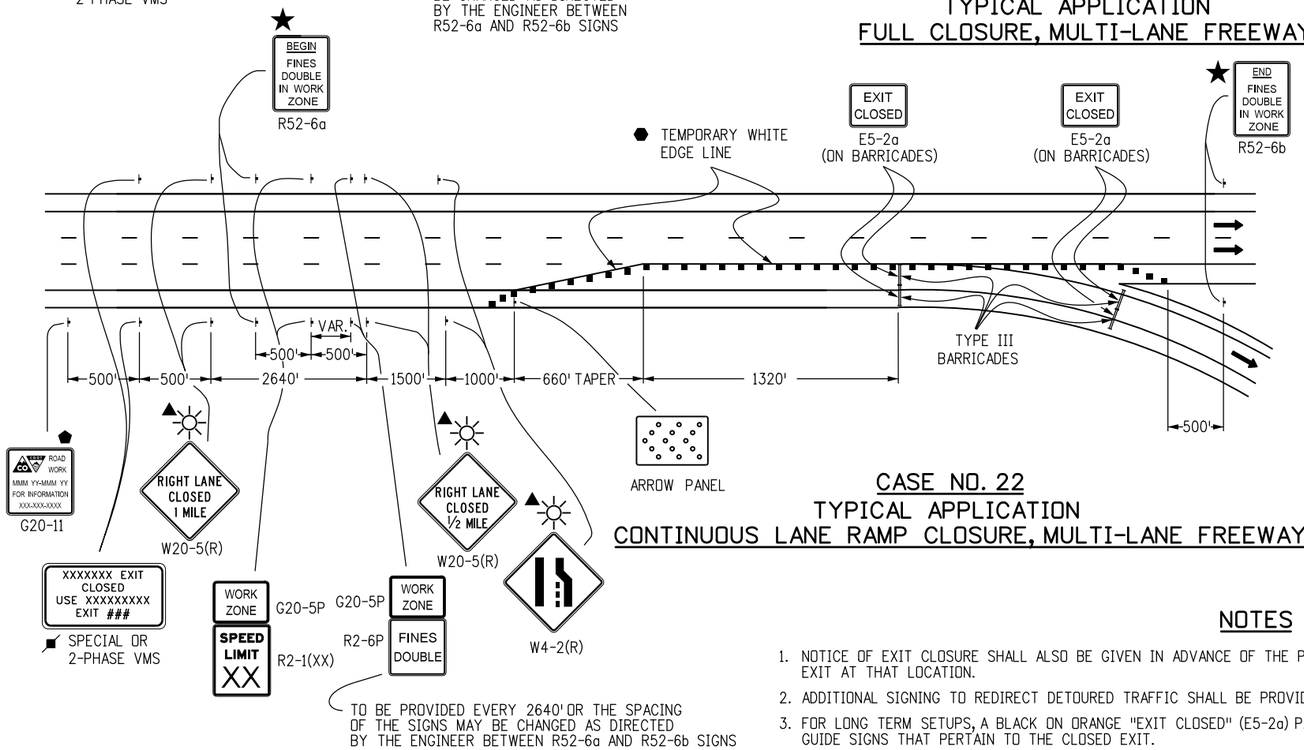
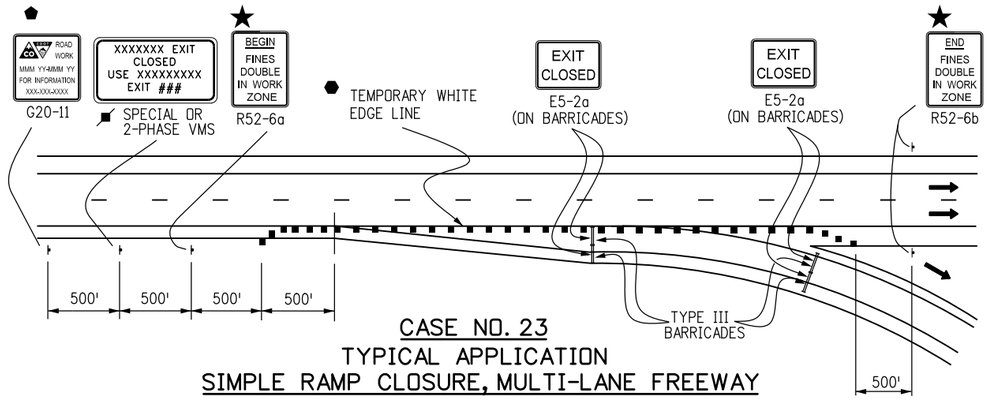


NOTE: MEASUREMENTS FOR THE LANE REDUCTION SHALL BE MEASURED FROM THE STRIPED GORE POINT.

CASE NO. 21
TYPICAL APPLICATION
FULL CLOSURE, MULTI-LANE FREEWAY



CASE NO. 22
TYPICAL APPLICATION
CONTINUOUS LANE RAMP CLOSURE, MULTI-LANE FREEWAY



CASE NO. 23
TYPICAL APPLICATION
SIMPLE RAMP CLOSURE, MULTI-LANE FREEWAY

LEGEND

- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED WILL BE DETERMINED BY THE DESIGNER BASED ON DETOUR DESIGN AND/OR SCOPE OF THE CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE PLANS.
- ⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- DIRECTION OF TRAVEL
- L TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: $L = S \times W$
  - SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
  - SHOULDER TAPER = 1/3 L
- CLOSURE AND EXIT MESSAGES ON SIGN LEGEND(S) SHOULD BE MODIFIED TO FIT THE SITUATION.
- FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

NOTES

1. NOTICE OF EXIT CLOSURE SHALL ALSO BE GIVEN IN ADVANCE OF THE PREVIOUS EXIT TO PROVIDE MOTORISTS WITH THE OPTION TO EXIT AT THAT LOCATION.
2. ADDITIONAL SIGNING TO REDIRECT DETOURED TRAFFIC SHALL BE PROVIDED FOR IN THE PROJECT'S METHOD OF HANDLING TRAFFIC.
3. FOR LONG TERM SETUPS, A BLACK ON ORANGE "EXIT CLOSED" (E5-2a) PANEL SHALL BE MOUNTED DIAGONALLY ACROSS ALL EXISTING GUIDE SIGNS THAT PERTAIN TO THE CLOSED EXIT.

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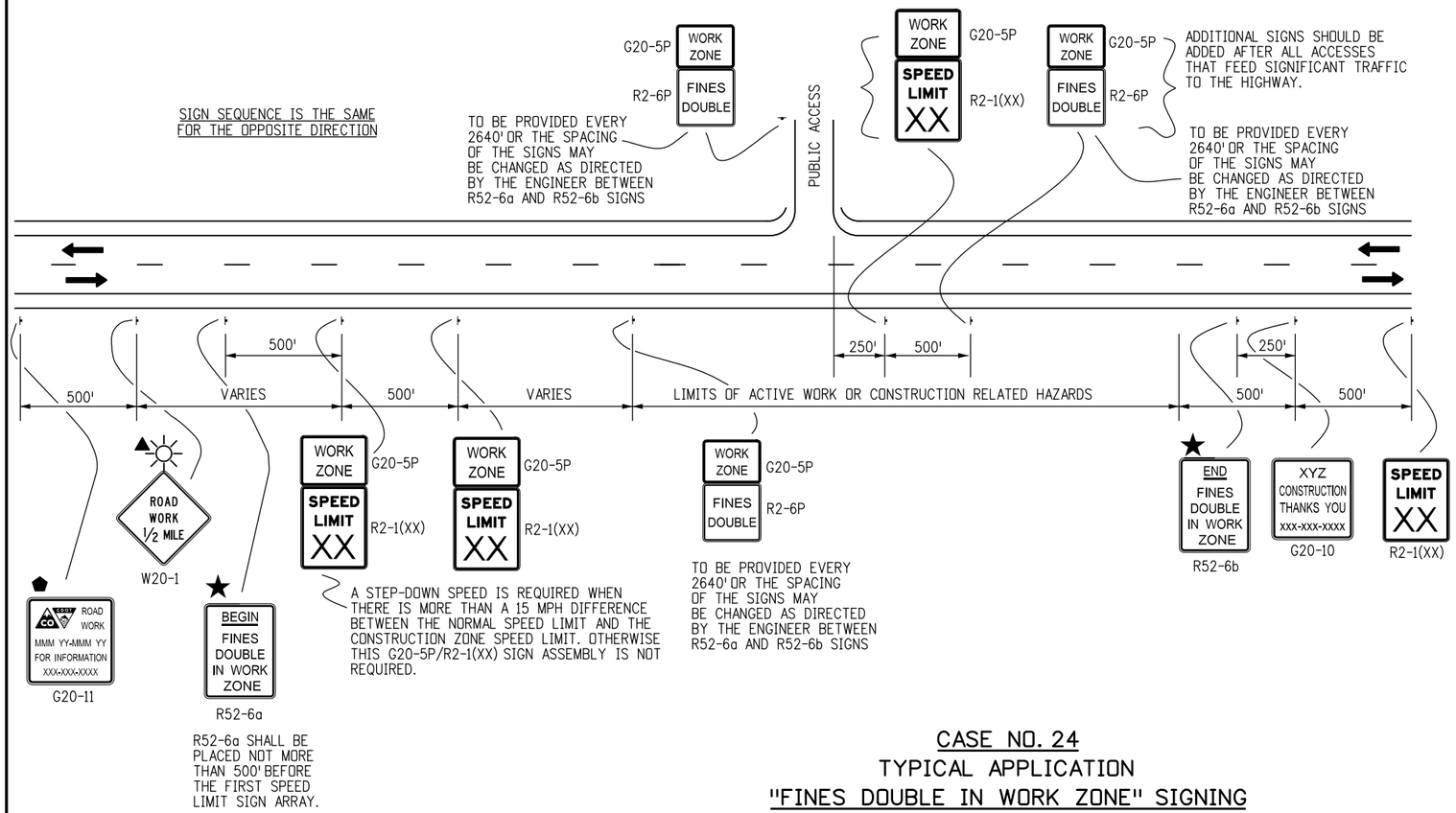

LEGEND

- DIRECTION OF TRAVEL
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED WILL BE DETERMINED BY THE DESIGNER BASED ON DETOUR DESIGN AND/OR SCOPE OF THE CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE PLANS.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- FLASHING BEACON
- ★ FINES DOUBLE SIGNING NOTES, SEE BELOW

FINES DOUBLE SIGNING NOTES:

1. SIGNS SHALL NOT BE PLACED SOONER THAN FOUR HOURS BEFORE WORK IS TO BEGIN AND SHALL BE REMOVED AS SOON AS WORK ACTIVITIES ARE CONCLUDED, UNLESS POTENTIAL HAZARDS INTRODUCED AS A RESULT OF THE WORK ARE STILL PRESENT AT THE END OF THE WORK DAY. IF SIGNS ARE LEFT IN PLACE AFTER WORK ACTIVITIES, THE TRAFFIC CONTROL SUPERVISOR SHALL MAKE AN ENTRY IN THEIR DAILY DIARY THAT JUSTIFIES THEIR USE.

   "HAZARDS" INCLUDE BUT ARE NOT LIMITED TO:
   - EDGE DROP OFFS
   - EQUIPMENT, WORKERS OR NON-SHIELDED OBJECTS IN THE CLEAR ZONE
   - ROUGH PAVEMENT
   - MAJOR CHANGE IN ALIGNMENT
   - REDUCED SHOULDER WIDTH
   - TEMPORARY GUARD RAIL OR BARRIER
   - LANE CLOSURE

2. SIGNS SHALL ONLY BE PLACED WHERE WORKERS ARE PRESENT IN THE ROADWAY OR CLEAR ZONE OR ARE AT RISK, OR WHERE THERE ARE HAZARDS IN THE TRAVELWAY, SHOULDERS OR CLEAR ZONE.

3. SIGNS SHOULD BE PLACED SO THAT MOTORISTS IMMEDIATELY ASSOCIATE THE SIGNS WITH PRESENT WORK ACTIVITIES. IF THE ZONE OF WORK ACTIVITY MOVES, THE SIGNS SHOULD BE MOVED ACCORDINGLY.

4. SIGNING SHOWN IS REQUIRED TO ENFORCE DOUBLE FINES IN A WORK ZONE. ADDITIONAL SIGNING SHALL BE IN ACCORDANCE WITH THAT NORMALLY REQUIRED FOR THE PARTICULAR WORK ZONE. PLACEMENT OF "FINES DOUBLE" SIGNING MAY BE ADJUSTED AS NEEDED TO PROVIDE A MINIMUM 250' SPACING BETWEEN OTHER SIGNING REQUIRED FOR THE SPECIFIC WORK ZONE SETUP.

CASE NO. 24
TYPICAL APPLICATION
"FINES DOUBLE IN WORK ZONE" SIGNING
(WITH SPEED REDUCTION)

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: RRR		Date:	Comments
Last Modification Date: Initials:	R-X		
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans	R-X		
Drawing File Name: S-630-01_12of24.dgn	R-X		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	R-X		

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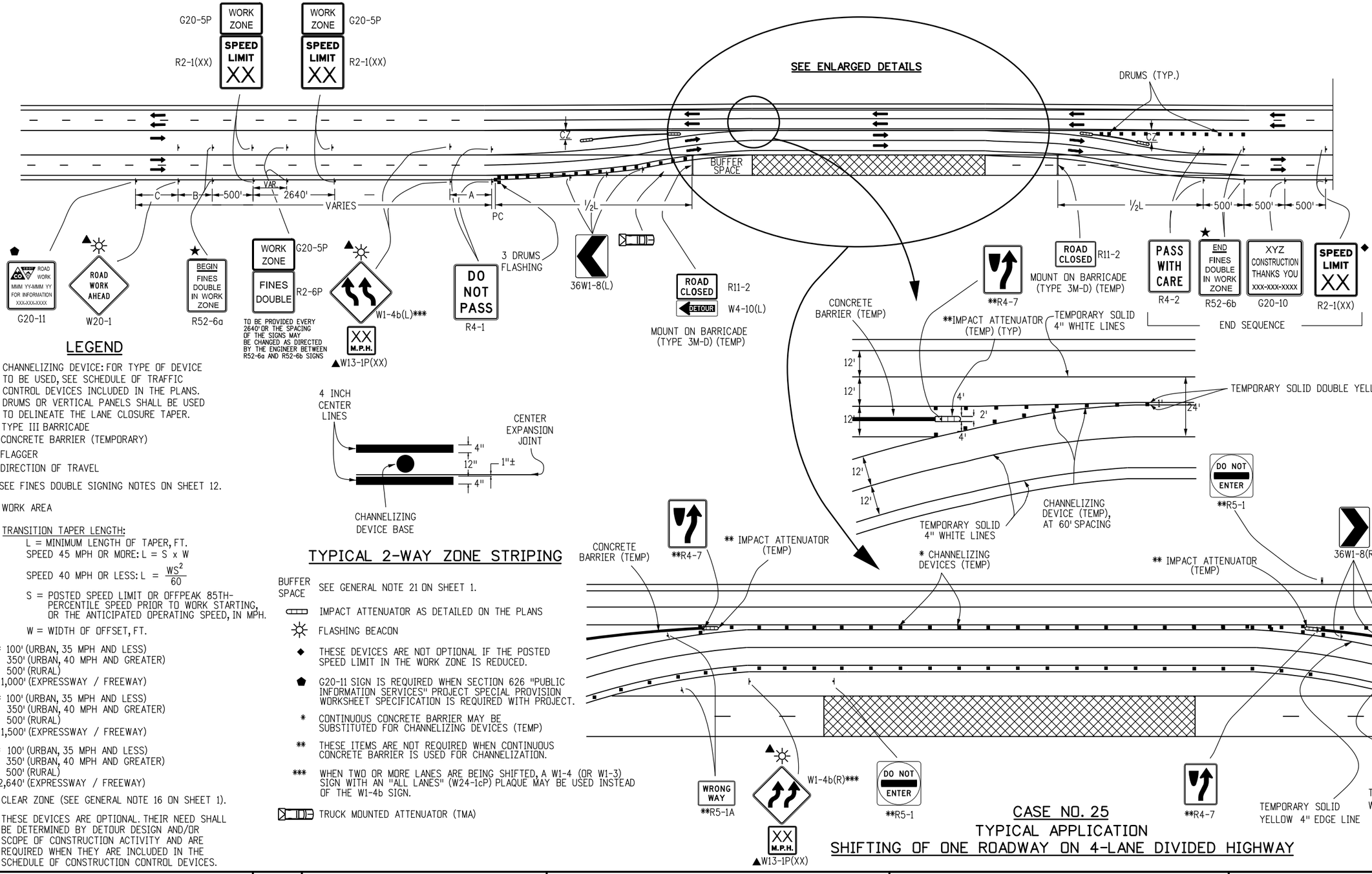

LEGEND

- ▪ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- DIRECTION OF TRAVEL
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- WORK AREA
- L TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER, FT.
  - SPEED 45 MPH OR MORE: $L = S \times W$
  - SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
  - S = POSTED SPEED LIMIT OR OFFPEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED, IN MPH.
  - W = WIDTH OF OFFSET, FT.
- A = 100' (URBAN, 35 MPH AND LESS); 350' (URBAN, 40 MPH AND GREATER); 500' (RURAL); 1,000' (EXPRESSWAY / FREEWAY)
- B = 100' (URBAN, 35 MPH AND LESS); 350' (URBAN, 40 MPH AND GREATER); 500' (RURAL); 1,500' (EXPRESSWAY / FREEWAY)
- C = 100' (URBAN, 35 MPH AND LESS); 350' (URBAN, 40 MPH AND GREATER); 500' (RURAL); 2,640' (EXPRESSWAY / FREEWAY)
- CZ CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.

TYPICAL 2-WAY ZONE STRIPING

- BUFFER SPACE: SEE GENERAL NOTE 21 ON SHEET 1.
- IMPACT ATTENUATOR AS DETAILED ON THE PLANS
- FLASHING BEACON
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- * CONTINUOUS CONCRETE BARRIER MAY BE SUBSTITUTED FOR CHANNELIZING DEVICES (TEMP)
- ** THESE ITEMS ARE NOT REQUIRED WHEN CONTINUOUS CONCRETE BARRIER IS USED FOR CHANNELIZATION.
- *** WHEN TWO OR MORE LANES ARE BEING SHIFTED, A W1-4 (OR W1-3) SIGN WITH AN "ALL LANES" (W24-1cP) PLAQUE MAY BE USED INSTEAD OF THE W1-4b SIGN.
- TRUCK MOUNTED ATTENUATOR (TMA)

CASE NO. 25
TYPICAL APPLICATION
SHIFTING OF ONE ROADWAY ON 4-LANE DIVIDED HIGHWAY

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: RRR		Date:	Comments
Last Modification Date: 02/06/13 Initials: KEN	R-1	02/06/13	UPDATE TO 2009 MUTCD STANDARD
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans	R-X		
Drawing File Name: S-630-01_13of24.dgn	R-X		
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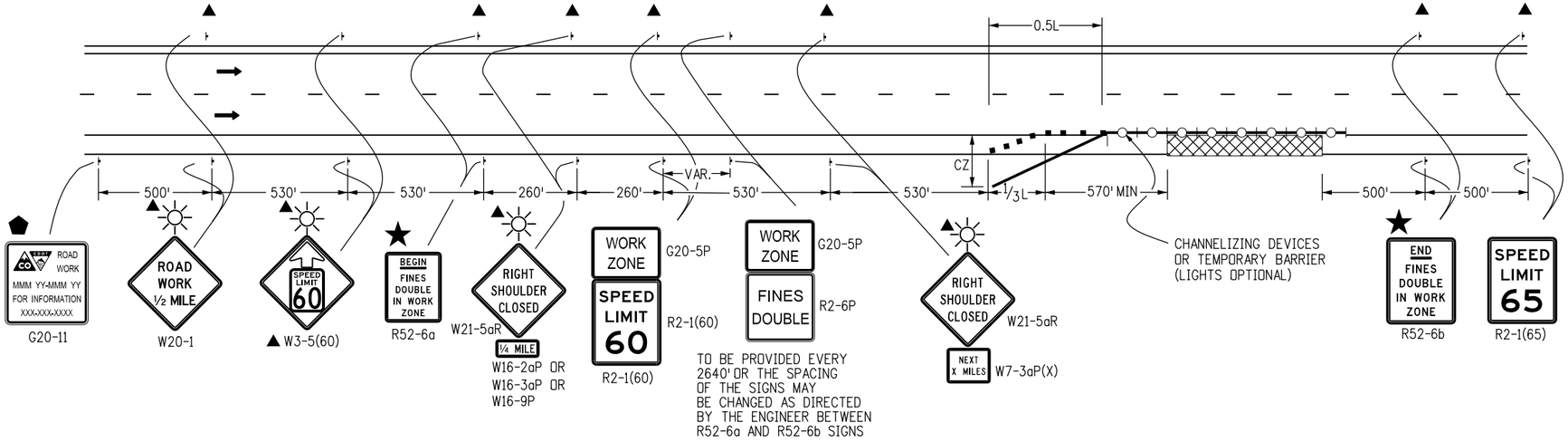
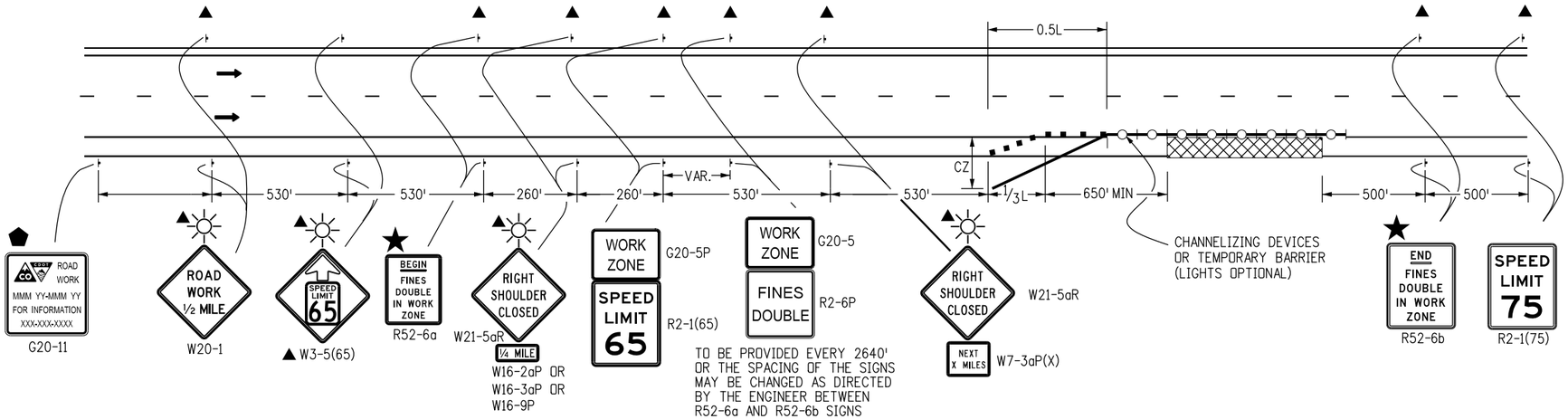


CASE NO. 26
TYPICAL APPLICATION
SHOULDER WORK - FREEWAY/EXPRESSWAY w/ 65 MPH SPEED LIMIT

WHEN HAZARDS (WORKERS, EQUIPMENT, OR TEMPORARY BARRIER) ARE WITHIN 8 FT OF TRAVEL WAY



CASE NO. 27
TYPICAL APPLICATION
SHOULDER WORK - FREEWAY/EXPRESSWAY w/ 75 MPH SPEED LIMIT

WHEN HAZARDS (WORKERS, EQUIPMENT, OR TEMPORARY BARRIER) ARE WITHIN 10 FT OF TRAVEL WAY

LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- DIRECTION OF TRAVEL
- WORK AREA
- L TRANSITION TAPER LENGTH:
  - L = MINIMUM LENGTH OF TAPER
  - SPEED 45 MPH OR MORE: L = S x W
  - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
  - W = WIDTH OF OFFSET
  - SHOULDER TAPER = 1/3 L
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY TRAFFIC VOLUMES AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- ⬟ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- TRUCK MOUNTED ATTENUATOR
- FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: RRR		Date:	Comments
Last Modification Date: Initials:	R-X		
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans	R-X		
Drawing File Name: S-630-01_14of24.dgn	R-X		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	R-X		

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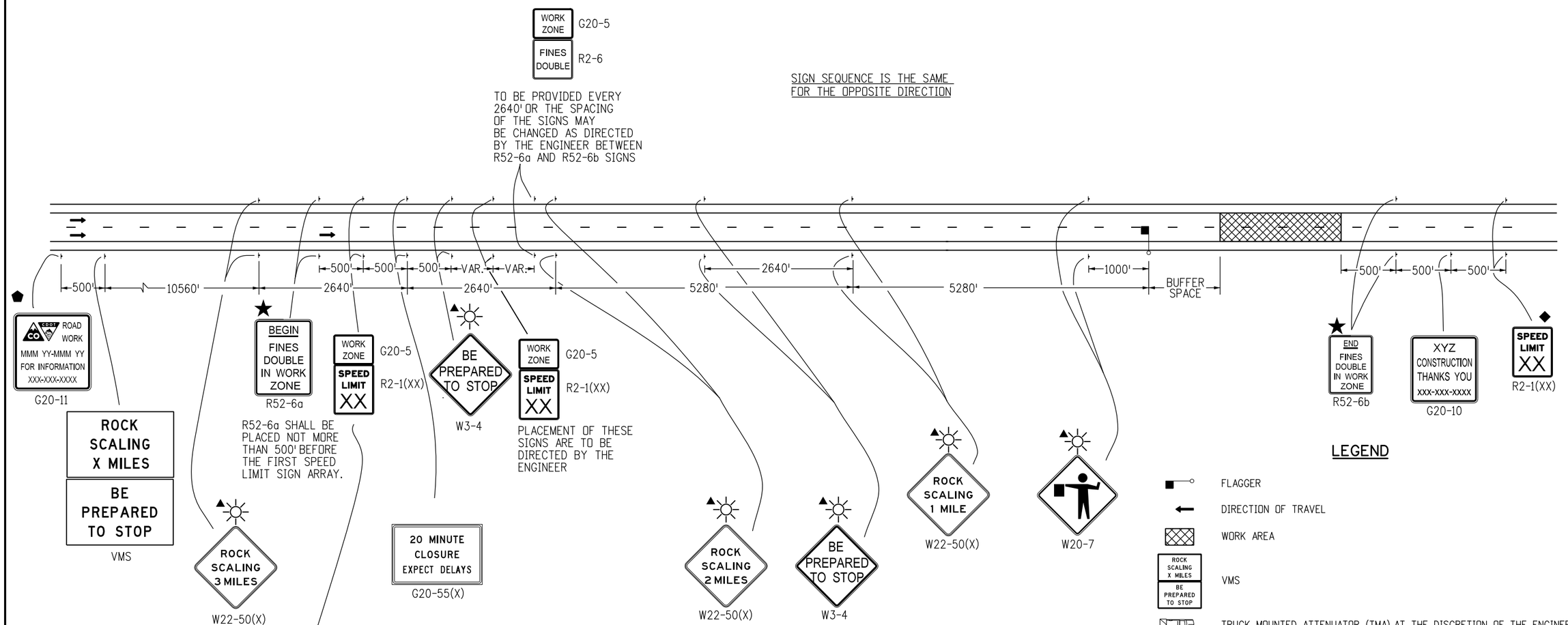

LEGEND

- FLAGGER
- DIRECTION OF TRAVEL
- WORK AREA
- ROCK SCALING X MILES / BE PREPARED TO STOP — VMS
- TRUCK MOUNTED ATTENUATOR (TMA) AT THE DISCRETION OF THE ENGINEER
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- BUFFER SPACE — SEE GENERAL NOTE 21 ON SHEET 1.
- FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

CASE NO. 28
TYPICAL APPLICATION
ROCK SCALING - ROAD CLOSURE, 4-LANE DIVIDED HIGHWAY

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: RRR		Date:	Comments
Last Modification Date: 07/26/13 Initials: KEN	R-4	07/26/13	CORRECTED SIGN CODE DESIGNATION FOR FLAGGER (SYMBOL) SIGN TO W20-7
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans	R-X		
Drawing File Name: S-630-01_15of24.dgn	R-X		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	R-X		

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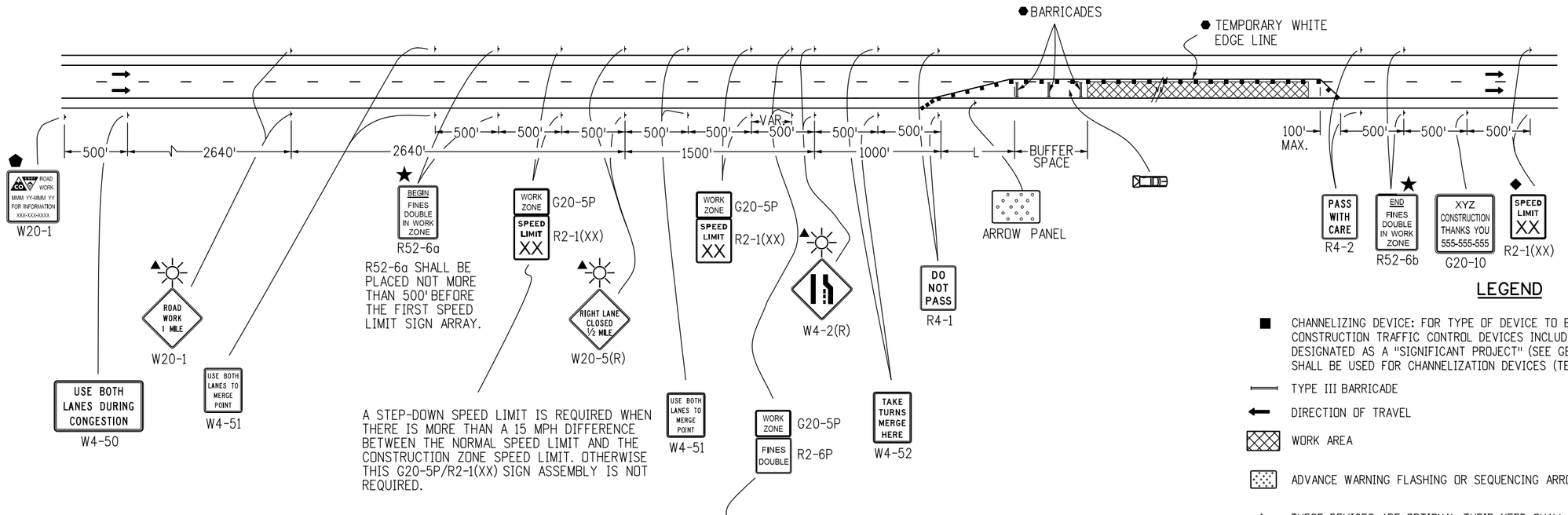

LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. IF PROJECT IS DESIGNATED AS A "SIGNIFICANT PROJECT" (SEE GENERAL NOTE 25), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.
- TYPE III BARRICADE
- DIRECTION OF TRAVEL
- WORK AREA
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- FLASHING BEACON
- ⬟ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- TRUCK MOUNTED ATTENUATOR (TMA)
- L TRANSITION TAPER LENGTH:

  L = MINIMUM LENGTH OF TAPER

  SPEED 45 MPH OR MORE: $L = S \times W$

  SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$

  S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

  W = WIDTH OF OFFSET

  SHOULDER TAPER = 1/3 L
- BUFFER SPACE SEE GENERAL NOTE 21 ON SHEET 1.

CASE NO. 29
TYPICAL APPLICATION
LATE MERGING - ONE LANE CLOSED, 4-LANE DIVIDED HIGHWAY

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: RRR		Date:	Comments
Last Modification Date: Initials:	R-X		
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans	R-X		
Drawing File Name: S-630-01_16of24.dgn	R-X		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	R-X		

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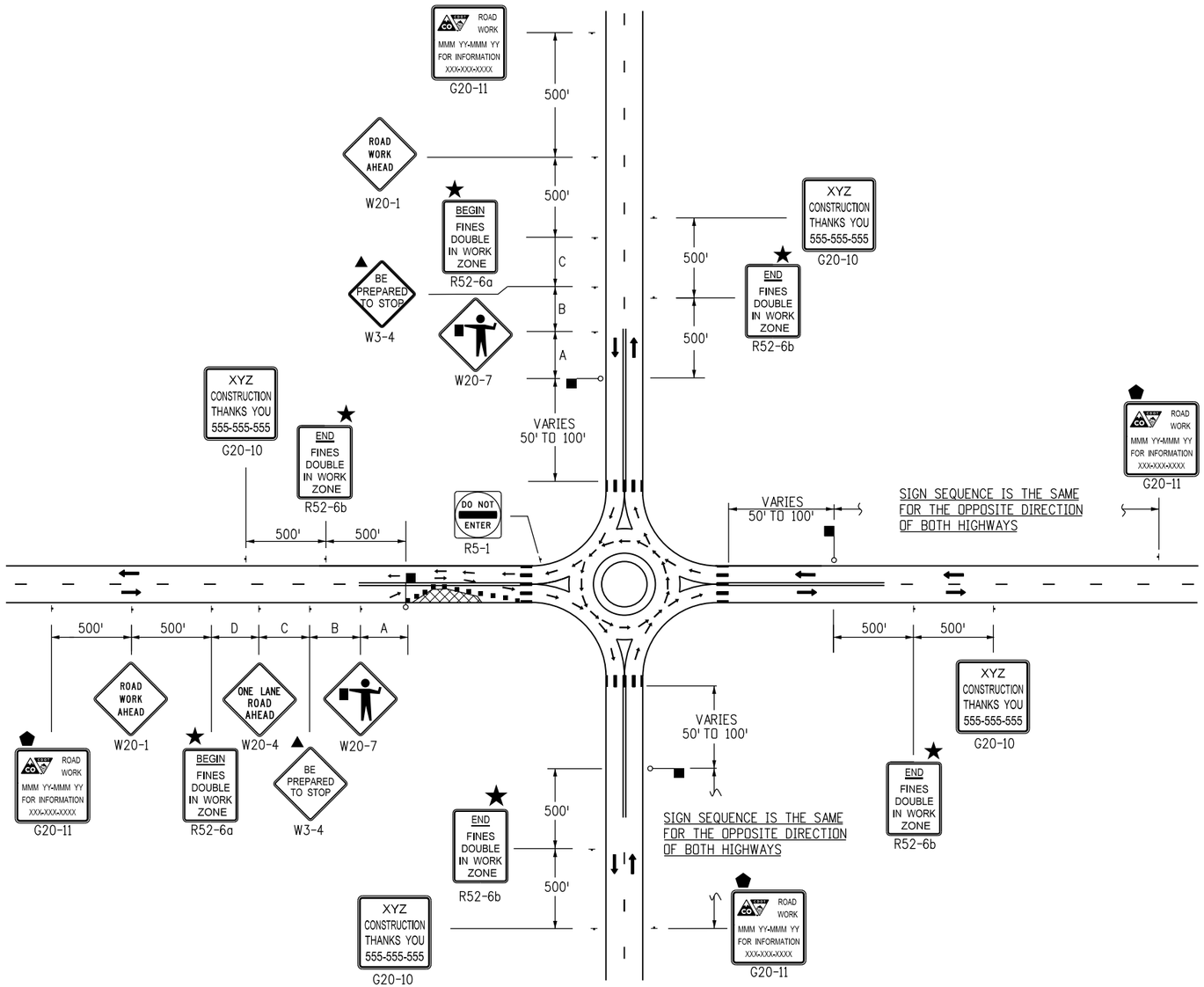

LEGEND

- ■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. IF PROJECT IS DESIGNATED AS A "SIGNIFICANT PROJECT" (SEE GENERAL NOTE 25), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.
- TYPE III BARRICADE
- DIRECTION OF TRAVEL
- WORK AREA
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- FLASHING BEACON
- ⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- TRUCK MOUNTED ATTENUATOR (TMA)
- L TRANSITION TAPER LENGTH:

  L = MINIMUM LENGTH OF TAPER

  SPEED 45 MPH OR MORE: $L = S \times W$

  SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$

  S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

  W = WIDTH OF OFFSET

  SHOULDER TAPER = 1/3 L
- BUFFER SPACE — SEE GENERAL NOTE 21 ON SHEET 1.
- FLAGGER

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (>= 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

CASE NO. 30
TYPICAL APPLICATION
ROUNDABOUT - PARTIAL CLOSURE NEAR ONE-LANE ROUNDABOUT

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: KEN		Date:	Comments
Last Modification Date: 12/08/14 Initials: KEN	R-7	12/08/14	NEW SHEET 17. OLD SHEET 17 NOW SHEET 21
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans	R-X		
Drawing File Name: S-630-01_17of24.dgn	R-X		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	R-X		

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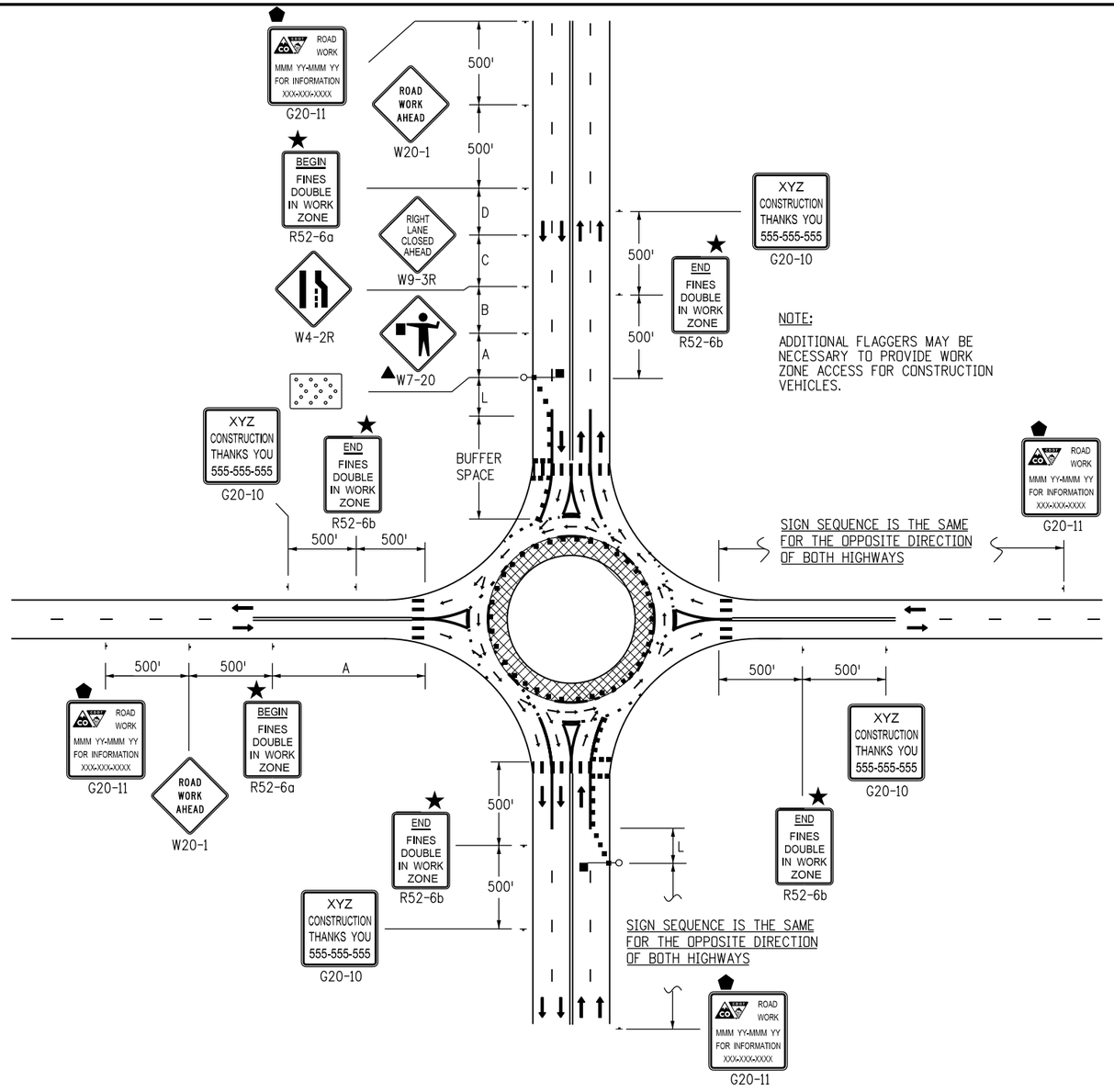

CASE NO. 31
TYPICAL APPLICATION *
ROUNDABOUT - INSIDE LANE CLOSURE FOR TWO-LANE ROUNDABOUT

LEGEND

* A TRUCK DETOUR ROUTE MAY BE NECESSARY TO DIVERT TRUCKS AWAY FROM THE ROUNDABOUT CIRCLE. ALSO NECESSARY IS A STREET NAME AND/OR ROUTE NUMBER SIGN, INFORMING MOTORISTS WHERE THEY NEED TO EXIT THE ROUNDABOUT CIRCLE TO ENTER THE DESIRED STREET AND/OR ROUTE NUMBER.

■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. IF PROJECT IS DESIGNATED AS A "SIGNIFICANT PROJECT" (SEE GENERAL NOTE 25), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.

TYPE III BARRICADE

DIRECTION OF TRAVEL

WORK AREA

ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.

▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.

◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.

⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.

FLASHING BEACON

⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.

★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

TRUCK MOUNTED ATTENUATOR (TMA)

L TRANSITION TAPER LENGTH:

L = MINIMUM LENGTH OF TAPER

SPEED 45 MPH OR MORE: $L = \frac{WS^2}{60}$

SPEED 40 MPH OR LESS: $L = \frac{WS^2}{2}$

S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

W = WIDTH OF OFFSET

SHOULDER TAPER = 1/3 L

BUFFER SPACE SEE GENERAL NOTE 21 ON SHEET 1.

FLAGGER

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (>= 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

Computer File Information	
Creation Date: 07/04/12 Initials: KEN	
Last Modification Date: 12/08/14 Initials: KEN	R-7
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans	R-X
Drawing File Name: S-630-01_18of24.dgn	R-X
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	R-X

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Date:	Comments
12/08/14	NEW SHEET 18. OLD SHEET 18 NOW SHEET 22

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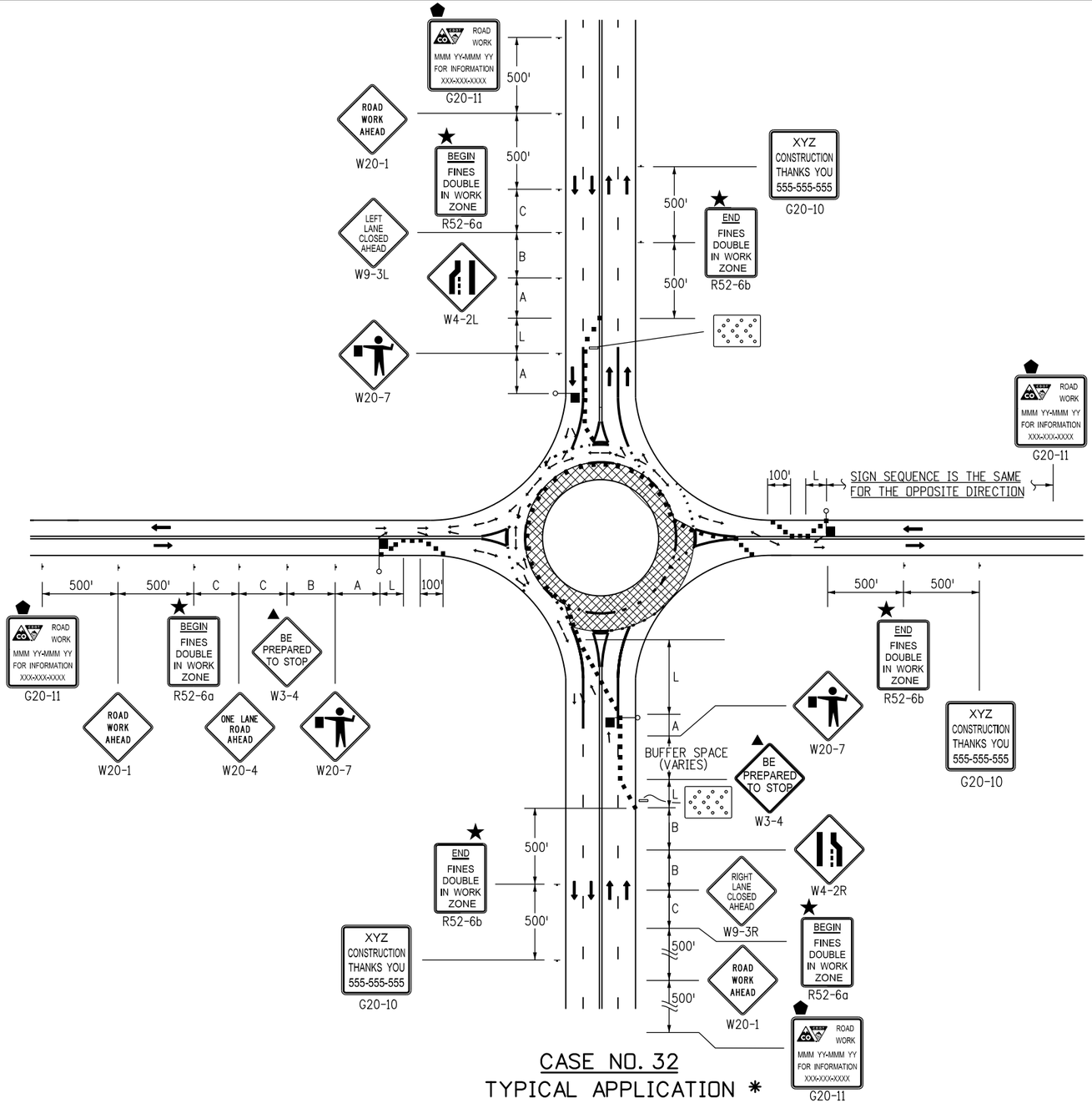

CASE NO. 32

TYPICAL APPLICATION *

ROUNDABOUT - OUTSIDE LANE CLOSURE FOR TWO-LANE ROUNDABOUT

LEGEND

* A TRUCK DETOUR ROUTE MAY BE NECESSARY TO DIVERT TRUCKS AWAY FROM THE ROUNDABOUT CIRCLE. ALSO NECESSARY IS A STREET NAME AND/OR ROUTE NUMBER SIGN, INFORMING MOTORISTS WHERE THEY NEED TO EXIT THE ROUNDABOUT CIRCLE TO ENTER THE DESIRED STREET AND/OR ROUTE NUMBER.

■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. IF PROJECT IS DESIGNATED AS A "SIGNIFICANT PROJECT" (SEE GENERAL NOTE 25), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.

TYPE III BARRICADE

DIRECTION OF TRAVEL

WORK AREA

ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.

▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.

◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.

⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.

FLASHING BEACON

⬟ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.

★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

TRUCK MOUNTED ATTENUATOR (TMA)

L TRANSITION TAPER LENGTH: =

L = MINIMUM LENGTH OF TAPER $\frac{WS^2}{60}$

SPEED 45 MPH OR MORE: L = S x W

SPEED 40 MPH OR LESS: L

S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

W = WIDTH OF OFFSET

SHOULDER TAPER = 1/3 L

BUFFER SPACE — SEE GENERAL NOTE 21 ON SHEET 1.

FLAGGER

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (>= 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

Computer File Information			Sheet Revisions	
Creation Date: 07/04/12	Initials: KEN		Date:	Comments
Last Modification Date: 12/08/14	Initials: KEN	R-7	12/08/14	NEW SHEET 19. OLD SHEET 19 NOW SHEET 23
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans		R-X		
Drawing File Name: S-630-01_19of24.dgn		R-X		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English		R-X		

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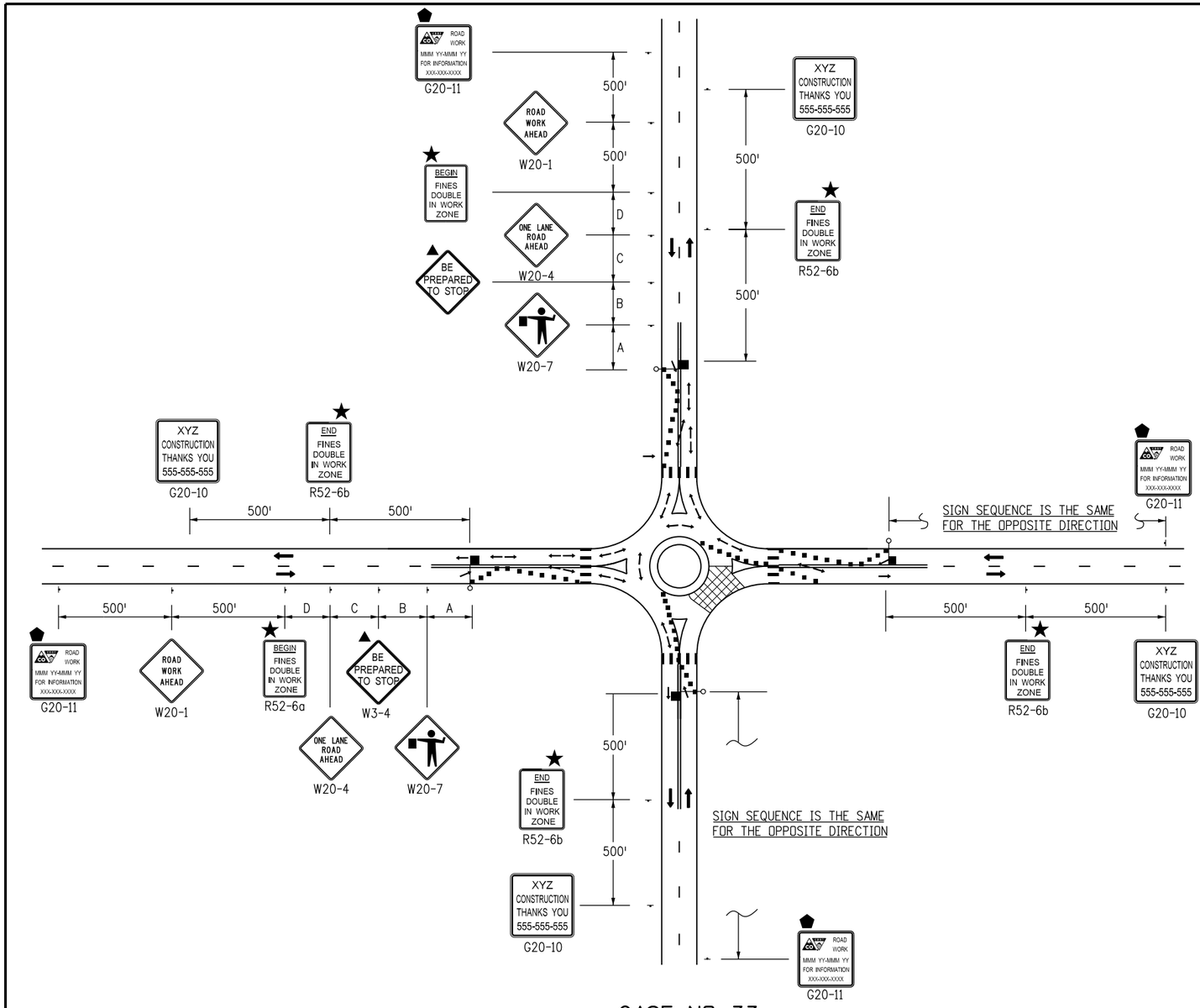

CASE NO. 33

TYPICAL APPLICATION *

ROUNDABOUT - PARTIAL CLOSURE FOR ONE-LANE ROUNDABOUT

LEGEND

* A TRUCK DETOUR ROUTE MAY BE NECESSARY TO DIVERT TRUCKS AWAY FROM THE ROUNDABOUT CIRCLE. ALSO NECESSARY IS A STREET NAME AND/OR ROUTE NUMBER SIGN, INFORMING MOTORISTS WHERE THEY NEED TO EXIT THE ROUNDABOUT CIRCLE TO ENTER THE DESIRED STREET AND/OR ROUTE NUMBER.

■ CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. IF PROJECT IS DESIGNATED AS A "SIGNIFICANT PROJECT" (SEE GENERAL NOTE 25), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.

TYPE III BARRICADE

DIRECTION OF TRAVEL

WORK AREA

ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.

▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.

◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.

⬟ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.

FLASHING BEACON

⬢ REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.

★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

TRUCK MOUNTED ATTENUATOR (TMA)

L TRANSITION TAPER LENGTH:

L = MINIMUM LENGTH OF TAPER

SPEED 45 MPH OR MORE: $L = \frac{WS^2}{60}$

SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$

S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED

W = WIDTH OF OFFSET

SHOULDER TAPER = 1/3 L

BUFFER SPACE SEE GENERAL NOTE 21 ON SHEET 1.

FLAGGER

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (>= 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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Drawing File Name: S-630-01_20of24.dgn	
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	

	Sheet Revisions	
	Date:	Comments
R-7	12/08/14	NEW SHEET 20. OLD SHEET 20 NOW SHEET 24
R-X		
R-X		
R-X		

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LEGEND

VEHICLE WITH TRUCK-MOUNTED ATTENUATORS (TMA), TWO 360-DEGREE YELLOW FLASHING BEACONS, AND YELLOW FLASHING VEHICLE LIGHTS OR STROBES.

VMS — VARIABLE MESSAGE SIGN (VMS).

▲ WHEN VMS IS USED, THE "SHOULDER CLOSED" SIGN BECOMES OPTIONAL.

■ THE "PICK-UP VEHICLES" OR "WARNING VEHICLE" MAY ENCROACH INTO THE TRAFFIC LANE WHEN THE SHOULDER IS TOO NARROW TO DRIVE ON.

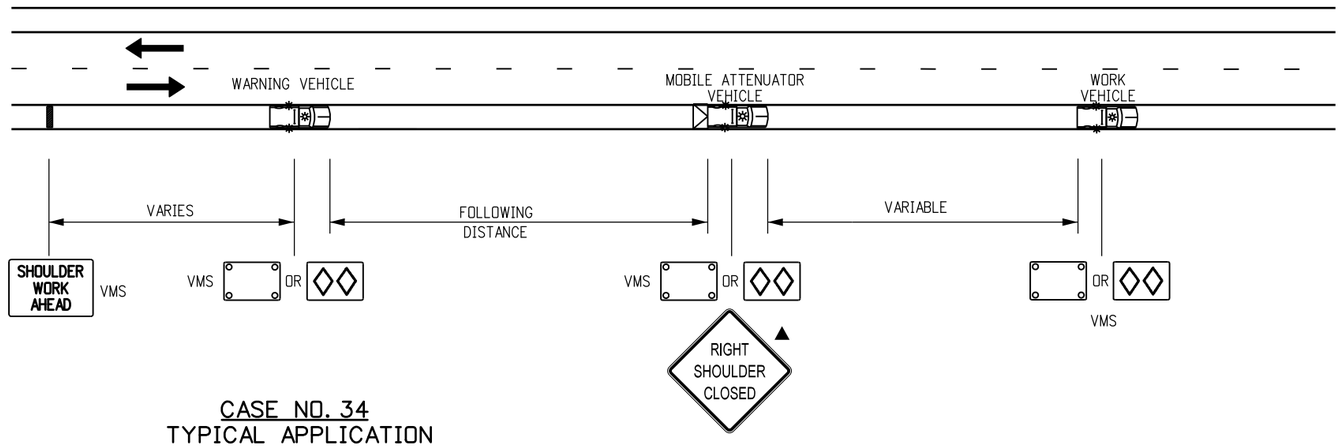
● IF TRACKING OF THE WET PAINT IS ANTICIPATED, THE USE OF CONES OR STATIONARY "WET PAINT" SIGNS SHALL BE POSTED.

⬢ THE VARIABLE SEPARATION DISTANCE BETWEEN THE "CONE PLACEMENT VEHICLE" AND "CONE PICKUP VEHICLE" SHALL BE DETERMINED BY THE TRACK DRYING TIME OF THE PAVEMENT MARKING MATERIAL.

⬬ OPTIONAL

FOLLOWING DISTANCE CHART FOR WARNING AND MOBILE ATTENUATOR (OR CONE PICKUP) VEHICLE

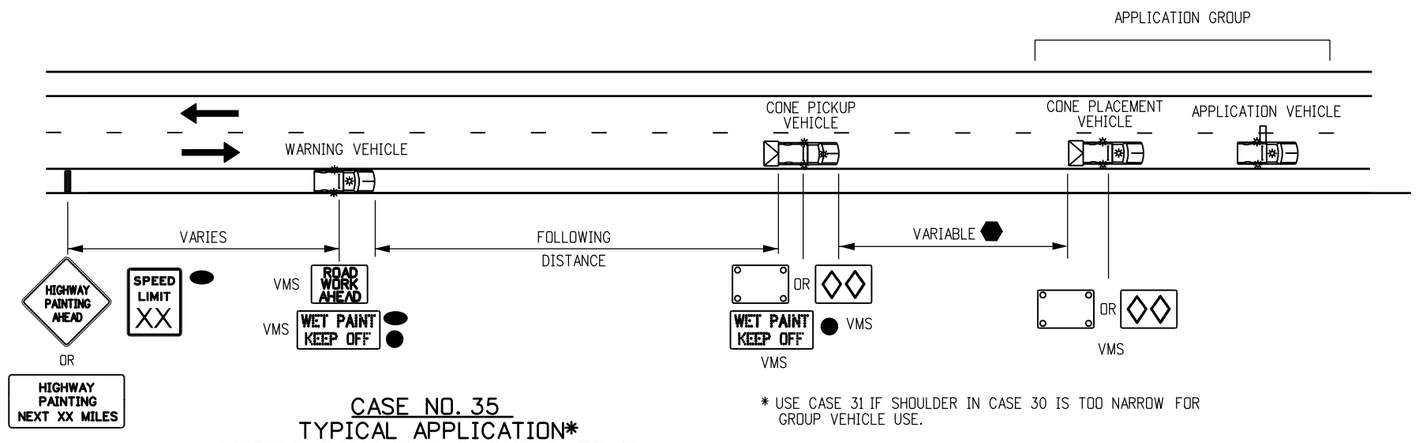
POSTED WZ SPEED LIMIT (MPH)	FOLLOWING DISTANCE (FEET)
0 - 30	250 - 550
35 - 40	325 - 700
45 - 50	600 - 900
55	750 - 1200
60 - 65	1000 - 1400
70 - 75	1200 - 1600



CASE NO. 34
TYPICAL APPLICATION
MOBILE WORK ZONE
MOBILE SHOULDER CLOSURE ON 2-LANE UNDIVIDED HIGHWAY

NOTE

THE VARIABLE SEPARATION DISTANCE BETWEEN THE "CONE PLACEMENT VEHICLE" AND "CONE PICKUP VEHICLE" SHALL BE DETERMINED BY THE TRACK DRYING TIME OF THE PAVEMENT MARKING MATERIAL.



CASE NO. 35
TYPICAL APPLICATION*
MOBILE PAVEMENT MARKING ZONE
CENTERLINE STRIPING ON 2-LANE UNDIVIDED HIGHWAY

* USE CASE 31 IF SHOULDER IN CASE 30 IS TOO NARROW FOR GROUP VEHICLE USE.

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: KEN		Date:	Comments
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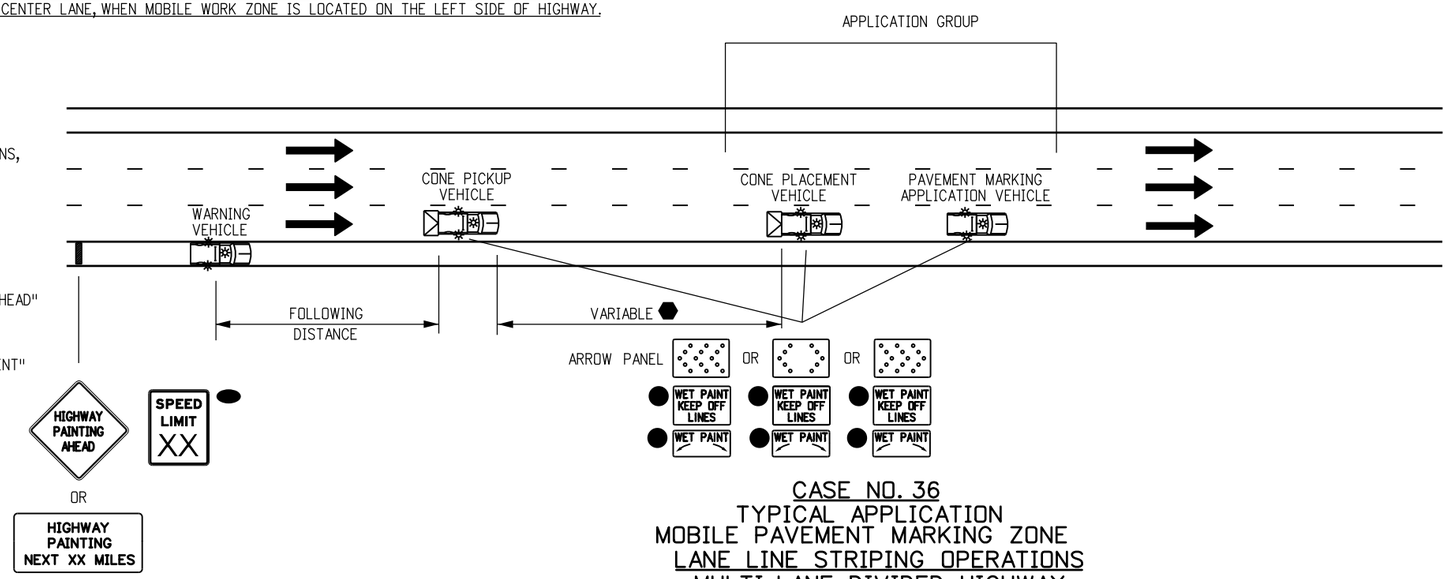
FOR CASE #32, VEHICLE/SIGN SEQUENCE IS THE SAME FOR THE LEFT SIDE OF HIGHWAY, WHILE TAPER IS MIRRORED ABOUT THE CENTER LANE, WHEN MOBILE WORK ZONE IS LOCATED ON THE LEFT SIDE OF HIGHWAY.

LEGEND

- VEHICLE WITH TRUCK-MOUNTED ATTENUATORS (TMA), TWO 360-DEGREE YELLOW FLASHING BEACONS, AND YELLOW FLASHING VEHICLE LIGHTS OR STROBES.
- ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.
- AHEAD / LANE CLOSED — PORTABLE VARIABLE MESSAGE SIGN (VMS).
- ▲ WHEN THE VMS IS USED, THE "SHOULDER CLOSED" (W21-5aX) OR W21-5bX), AND "RAMP CLOSED AHEAD" SIGNS BECOME OPTIONAL.
- ● IF TRACKING OF THE WET PAINT IS ANTICIPATED, THE USE OF CONES OR STATIONARY "WET PAINT" SIGNS SHALL BE POSTED.
- ⬢ THE VARIABLE SEPARATION DISTANCE BETWEEN THE "CONE PLACEMENT VEHICLE" AND "CONE PICKUP VEHICLE" SHALL BE DETERMINED BY THE TRACK DRYING TIME OF THE PAVEMENT MARKING MATERIAL.
- ⬬ OPTIONAL



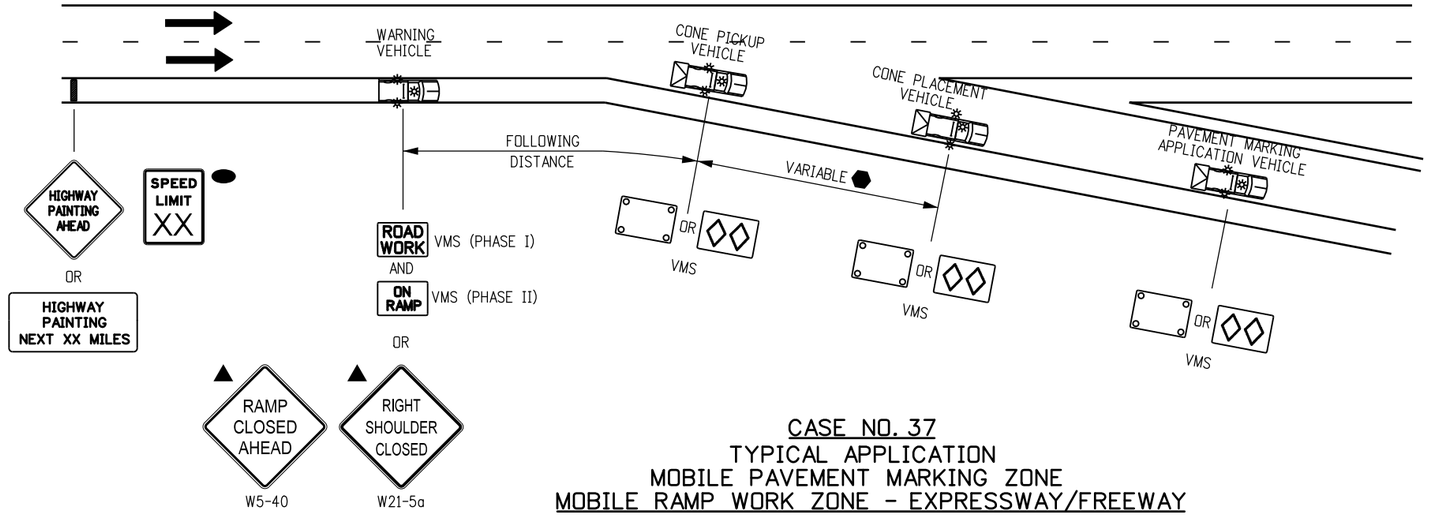
CASE NO. 36
TYPICAL APPLICATION
MOBILE PAVEMENT MARKING ZONE
LANE LINE STRIPING OPERATIONS
MULTI-LANE DIVIDED HIGHWAY

FOLLOWING DISTANCE CHART FOR WARNING VEHICLE AND CONE PICKUP VEHICLES

POSTED WZ SPEED LIMIT (MPH)	FOLLOWING DISTANCE (FEET)
0 - 30	250 - 550
35 - 40	325 - 700
45 - 50	600 - 900
55	750 - 1200
60 - 65	1000 - 1400
70 - 75	1200 - 1600

NOTES

1. THE SIGNING VEHICLES MAY ENCROACH INTO THE TRAFFIC LANE WHEN THE SHOULDER IS TOO NARROW TO DRIVE ON.
2. IF THE RAMP CANNOT BE REOPENED WITHIN 15 MINUTES, USE CASE NO. 22 OF THE S-630-1 STANDARD PLAN.



CASE NO. 37
TYPICAL APPLICATION
MOBILE PAVEMENT MARKING ZONE
MOBILE RAMP WORK ZONE - EXPRESSWAY/FREEWAY

Computer File Information		Sheet Revisions	
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Last Modification Date: 12/8/14 Initials: KEN	R-5	3/27/14	REDUCE NUMBER OF TMA VEHICLES, REVISE VMS, AND ADD STATIONARY SIGNS
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Drawing File Name: S-630-1_22of24.dgn	R-X		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	R-X		

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LEGEND

VEHICLE WITH TRUCK-MOUNTED ATTENUATORS (TMA), TWO 360-DEGREE YELLOW FLASHING BEACONS, AND YELLOW FLASHING VEHICLE LIGHTS OR STROBES.

ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.

LANE CLOSED — PORTABLE VARIABLE MESSAGE SIGN (VMS).

▲ WHEN THE VMS IS USED, THE "RIGHT LANE CLSED AHEAD" (W9-3X) SIGN BECOMES OPTIONAL.

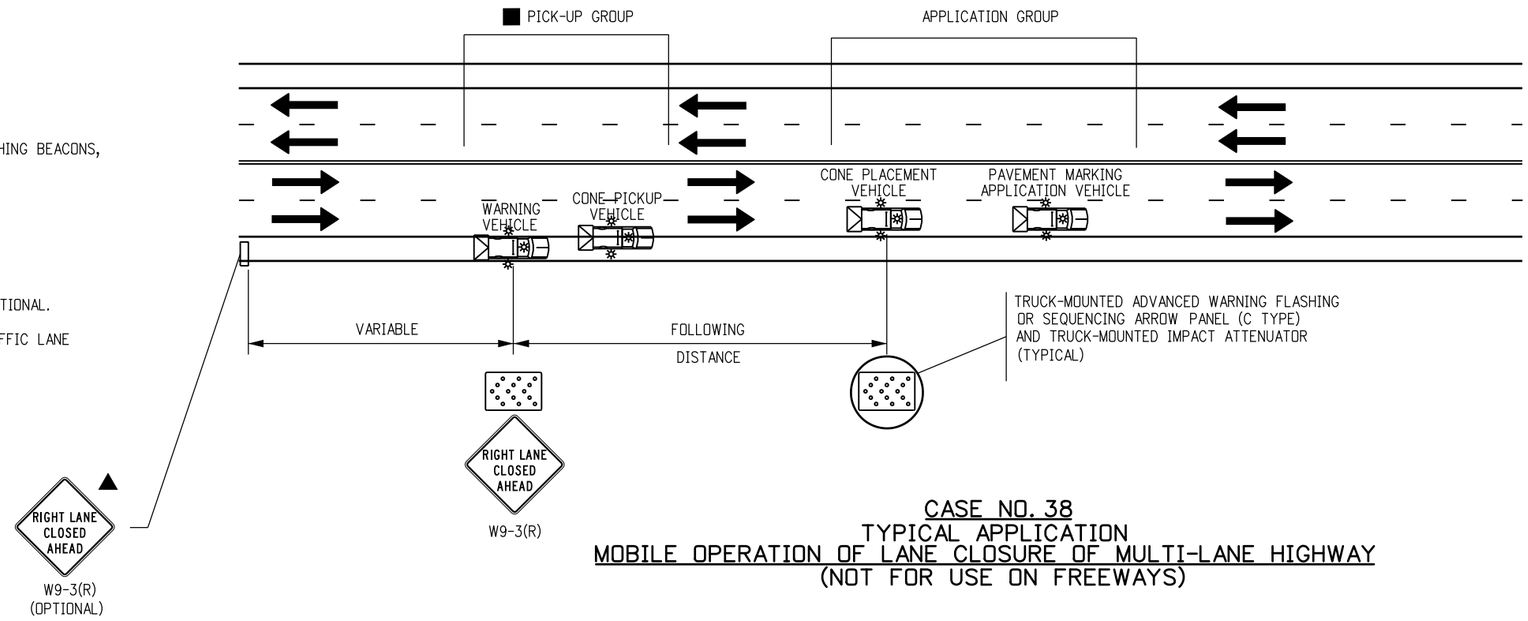
■ THE "CONE PICK-UP VEHICLE" OR "WARNING VEHICLE" MAY ENCROACH INTO THE TRAFFIC LANE WHEN THE SHOULDER IS TOO NARROW TO DRIVE ON.

NOTES

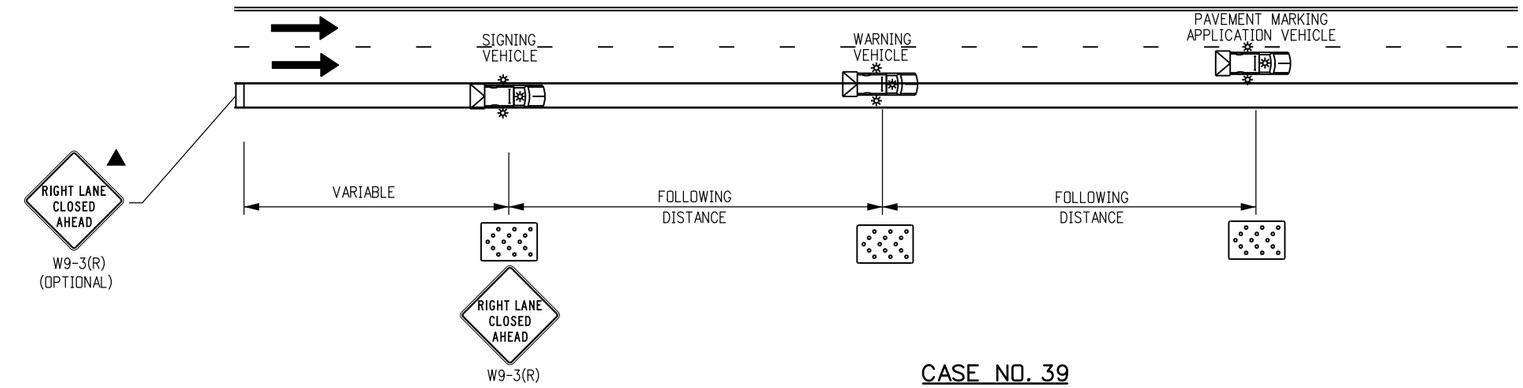
1. IN ROADWAY WHERE THE AADT IS 2,000 OR LESS, A SINGLE WORK VEHICLE WITH APPROPRIATE WARNING DEVICES ON THE VEHICLE MAY BE USED.
2. RADIO COMMUNICATIONS BETWEEN THE WORKCREW AND THE MOVING BLOCKADE ARE REQUIRED TO ADJUST THE BLOCKADE TO INCREASE OR DECREASE THE CLOSURE TIME. RELEASE TRAFFIC ONLY AFTER CONFIRMATION THAT ALL WORKERS AND THEIR VEHICLES ARE CLEAR OF THE ROADWAY.
3. IF APPLICABLE, ALL RAMPS AND ACCESS BETWEEN THE MOVING BLOCKADE AND WORK OPERATION AREA SHALL BE TEMPORARILY CLOSED USING TRAFFIC CONTROL EQUIPMENT AND PERSONNEL. EACH RAMP MUST REMAIN CLOSED UNTIL THE CREW DOING THE WORK GIVES THE "ALL CLEAR" SIGNAL OR UNTIL THE FRONT OF THE MOVING BLOCKADE PASSES THE CLOSED RAMP(S).

FOLLOWING DISTANCE CHART FOR WARNING VEHICLE AND SIGNING VEHICLES

POSTED WZ SPEED LIMIT (MPH)	FOLLOWING DISTANCE (FEET)
0 - 30	250 - 550
35 - 40	325 - 700
45 - 50	600 - 900
55	750 - 1200
60 - 65	1000 - 1400
70 - 75	1200 - 1600



CASE NO. 38
TYPICAL APPLICATION
MOBILE OPERATION OF LANE CLOSURE OF MULTI-LANE HIGHWAY
(NOT FOR USE ON FREEWAYS)



CASE NO. 39
TYPICAL APPLICATION
MOBILE OPERATION OF LANE CLOSURE OF MULTI-LANE HIGHWAY

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TYPICAL CONSTRUCTION ZONE SIGNS

THESE SIGNING NOTES ARE INTENDED AS A QUICK REFERENCE
FOR TYPICAL SIGN USE AND PLACEMENT IN CONSTRUCTION ZONES.

G20-1 "ROAD/WORK/NEXT XX MILES" - THIS SIGN SHALL BE ERECTED AT THE LIMITS OF ANY ROAD CONSTRUCTION OR MAINTENANCE PROJECT OF MORE THAN TWO (2) MILES IN LENGTH WHERE TRAFFIC IS MAINTAINED THROUGH THE PROJECT.

G20-4 "PILOT CAR/FOLLOW ME" - THIS SIGN SHALL BE MOUNTED IN A CONSPICUOUS POSITION ON THE REAR OF A VEHICLE USED FOR GUIDING ONE-WAY TRAFFIC THROUGH OR AROUND THE PROJECT.

G20-5P "WORK ZONE" - THIS PLAQUE SHALL BE MOUNTED JUST ABOVE THE WORK ZONE SPEED LIMIT SIGNS PRIOR TO THE WORK ZONE AREA.

G20-10 THANK YOU SIGN - THIS SIGN SHOULD BE ERECTED APPROXIMATELY 500 FEET BEYOND THE END OF THE PROJECT.

G20-11 CONSTRUCTION PROJECT INFORMATION SIGN - THIS SIGN SHOULD BE ERECTED AS DESCRIBED IN THE SECTION 626 STANDARD SPECIFICATION.

G20-55(X) "X MINUTE CLOSURE. EXPECT DELAYS" - THIS SIGN IS INTENDED FOR USE 500 FEET PAST THE "WORK ZONE"/SPEED LIMIT SIGN.

M4-9( ) "DETOUR/<<<<" - THIS SIGN IS USED FOR UNNUMBERED ROUTES; FOR USE IN EMERGENCY SITUATIONS; FOR PERIODS OF SHORT DURATION; OR WHERE, OVER RELATIVELY SHORT DISTANCES. IT IS NOT NECESSARY TO SHOW ROUTE MARKERS TO GUIDE TRAFFIC ALONG THE DETOUR AND BACK TO ITS AUTHORIZED ROUTE.

M4-10( ) "DETOUR ARROW" - THIS SIGN SHOULD BE MOUNTED JUST BELOW THE ROAD CLOSED SIGN AT THE POINT WHERE THE DETOUR ROADWAY OR ROUTE HAS BEEN ESTABLISHED DUE TO THE CLOSURE OF THE STREET OR HIGHWAY TO THROUGH TRAFFIC.

R2-1( ) "SPEED/LIMIT/XX" - THESE SIGNS ARE INTENDED TO REDUCE TRAFFIC SPEED IN ADVANCE OF THE DAILY WORK AREA WITHIN THE OVERALL PROJECT LIMITS.

R2-1(XX) "SPEED/LIMIT/XX" - THIS SIGN IS INTENDED FOR USE 500 FEET PAST THE "THANK YOU" SIGN TO BRING TRAFFIC BACK TO ORIGINAL POSTED SPEED.

R2-6P "FINES DOUBLE" - THIS SIGN IS INTENDED FOR USE WITHIN WORK ZONES TO PROVIDE NOTICE OF INCREASED FINES FOR TRAFFIC VIOLATIONS WITHIN WORK ZONES.

R4-1 "DO NOT PASS" - THIS SIGN SHOULD BE PLACED AT TRANSITION TAPER POINT.

R4-2 "PASS WITH CARE" - THIS SIGN SHOULD BE PLACED AT TRANSITION TAPER POINT.

R11-2 "ROAD/CLOSED" - THIS SIGN IS TO BE MOUNTED ON THE BARRICADE THAT IS PLACED BEFORE THE WORK ZONE ENTRANCE TO PROHIBIT TRAFFIC FROM ENTERING THE WORK ZONE.

R11-3 "ROAD CLOSED/X MILES AHEAD/L.T.D. - THIS SIGN SHOULD BE PLACED WHERE THROUGH TRAFFIC MUST DETOUR TO AVOID THE CLOSURE OF THE ROAD SOME DISTANCE BEYOND, BUT WHERE THE ROAD IS OPEN TO LOCAL TRAFFIC UP TO THE POINT OF CLOSURE.

R11-4 "ROAD CLOSED/TO/THRU TRAFFIC" FOR URBAN USE - THIS SIGN SHOULD BE PLACED WHERE THROUGH TRAFFIC MUST DETOUR TO AVOID THE CLOSURE OF THE ROAD SOME DISTANCE BEYOND, BUT WHERE THE ROAD IS OPEN TO LOCAL TRAFFIC UP TO THE POINT OF CLOSURE.

R52-6a "BEGIN FINES DOUBLE IN WORK ZONE" SIGN IS PLACED AT THE BEGINNING OF THE ADVANCED WARNING AREA OF THE TRAFFIC CONTROL ZONE.

R52-6b "END FINES DOUBLE IN WORK ZONE" SIGN IS PLACED AFTER WORK ZONE AREA, PAST DOWNSTREAM TAPER SECTION.

W1-1( ) "TURN ARROW" - THIS SIGN IS INTENDED FOR USE WHERE ENGINEERING INVESTIGATIONS OF ROADWAY CONDITIONS SHOW THE RECOMMENDED SPEED ON THE TURN TO BE 30 MPH OR LESS.✱

W1-2( ) "CURVE ARROW" - THIS SIGN IS INTENDED FOR USE WHERE ENGINEERING INVESTIGATIONS OF ROADWAY CONDITIONS SHOW THE RECOMMENDED SPEED ON THE CURVE TO BE IN THE RANGE BETWEEN 30 AND 60 MILES PER HOUR.✱

W1-3( ) "REVERSE TURN ARROW" - THIS SIGN IS INTENDED FOR USE WHERE TWO TURNS OR THE CURVE AND A TURN IN OPPOSITE DIRECTIONS ARE SEPARATED BY A TANGENT OF LESS THAN 600 FEET.✱

W1-4( ) "REVERSE CURVE ARROW" - THIS SIGN IS INTENDED FOR USE WHERE TWO CURVES IN OPPOSITE DIRECTIONS ARE SEPARATED BY A TANGENT OF LESS THAN 600 FEET.✱

W1-6( ) "ARROW" - THIS SIGN SHOULD BE MOUNTED JUST BELOW THE ROAD CLOSED SIGN AT THE POINT WHERE THE DIVERSION HAS BEEN ESTABLISHED DUE TO THE LANE CLOSURE.

W3-2 "YIELD AHEAD" - THIS SIGN IS INTENDED FOR USE AT THE APPROACH TO THE YIELD SIGN THAT IS NOT VISIBLE FOR A SUFFICIENT DISTANCE TO PERMIT THE DRIVER TO BRING HIS VEHICLE TO A STOP AT THE YIELD SIGN.✱

W3-4 "BE PREPARED TO STOP" - THIS SIGN TO BE PLACED 1.5 MILES IN ADVANCED OF A FLAGGER.

W4-2(X) "LEFT (RIGHT) LANE TRANSITION SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE REDUCTION IN THE NUMBER OF TRAFFIC LANES IN THE DIRECTION OF TRAVEL ON THE MULTILANE HIGHWAY.✱

W4-50 "USE BOTH LANES DURING CONGESTION" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE "ROAD WORK X MILE" ADVANCED WARNING SIGN.

W4-51 "USE BOTH LANES TO MERGE POINT" - THIS SIGN IS INTENDED TO DIRECT MOTORISTS TO USE BOTH TRAVEL LANES UNTIL THE LANES ARE REDUCED TO ONE LANE.

W4-52 "TAKE TURNS MERGE HERE" - THIS SIGN IS INTENDED TO WARN MOTORISTS IN ADVANCED TO MOVE FROM THE CLOSED TRAVEL LANE TO THE OPEN TRAVEL LANE, USUALLY 500 FEET IN ADVANCED OF THE START OF THE TRANSITION TAPER .

W5-1 "ROAD NARROWS" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE TRANSITION ON THE ROAD WHERE THE PAVEMENT WIDTH IS REDUCED ABRUPTLY TO A WIDTH SUCH THAT TWO CARS CANNOT PASS WITHOUT REDUCING SPEED.✱

W5-2a "NARROW BRIDGE SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A BRIDGE OR CULVERT HAVING A CLEAR TWO-WAY ROADWAY WIDTH OF 16 TO 18 FEET OR ANY BRIDGE OR CULVERT HAVING A ROADWAY CLEARANCE LESS THAN THE WIDTH OF THE APPROACH PAVEMENT.✱

W5-3 "ONE LANE/BRIDGE" - THIS SIGN SHOULD BE PLACED ON TWO-WAY ROADWAYS IN ADVANCE OF THE BRIDGES OR CULVERTS WHERE THE ROADWAY WIDTH IS LESS THAN 16 FEET (18 FEET FOR COMMERCIAL VEHICLES) OR WHEN THE ALIGNMENT IS POOR ON THE APPROACH TO THE STRUCTURE HAVING A CLEAR ROADWAY WIDTH OF 18 FEET OR LESS✱

W6-1 "DIVIDED HIGHWAY SYMBOL" - THIS SIGN SHOULD BE PLACED ON THE APPROACHES TO THE SECTION OF HIGHWAY WHERE OPPOSING FLOWS OF TRAFFIC ARE SEPARATED BY A PHYSICAL MEDIAN.

W6-2 "DIVIDED HIGHWAY ENDS SYMBOL" - THIS SIGN SHOULD BE PLACED AT THE END OF THE SECTION OF PHYSICALLY DIVIDED HIGHWAY AS A WARNING OF TWO-WAY TRAFFIC AHEAD.

W6-3 "TWO-WAY TRAFFIC SYMBOL" - THIS SIGN IS INTENDED FOR USE TO GIVE WARNING OF TRANSITION FROM A SEPARATED ONE-WAY ROADWAY TO A TWO-WAY ROADWAY.✱

W7-1 "HILL SYMBOL" - THIS SIGN SHOULD BE PLACED AT A POINT IN ADVANCE OF THE DOWNGRADE WHERE THE LENGTH, PERCENT OF GRADE, HORIZONTAL CURVATURE, OR OTHER PHYSICAL FEATURES REQUIRE SPECIAL CONSIDERATION ON THE PART OF DRIVERS.✱

W8-1,W8-2 "BUMP"/"DIP" - THESE SIGNS ARE INTENDED FOR USE TO GIVE WARNING OF A SHARP RISE OR DEPRESSION IN THE PROFILE OF THE ROAD THAT IS SUFFICIENTLY ABRUPT TO AFFECT VEHICLE OPERATION OR CAUSE CONSIDERABLE DISCOMFORT TO PASSENGERS.✱

W8-3a "PAVEMENT ENDS SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT WHERE THE PAVEMENT SURFACE CHANGES FROM A HARD-SURFACED PAVEMENT TO THE LOW-TYPE SURFACE OR EARTH ROAD.✱

W8-4 "SOFT SHOULDER" - THIS SIGN IS INTENDED FOR USE TO WARN OF A SOFT SHOULDER CONDITION THAT COULD PRESENT A PROBLEM TO VEHICLES THAT MAY GET OFF THE PAVEMENT.✱

W8-5 "SLIPPERY WHEN WET SYMBOL" - THIS SIGN SHOULD BE PLACED IN ADVANCE OF THE CONDITION WHERE THE HIGHWAY SURFACE IS SLIPPERY BEYOND WHAT IS ORDINARY WHEN WET.✱

W8-9a "SHOULDER DROP-OFF" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A SHOULDER DROP-OFF THAT EXCEEDS THREE INCHES IN HEIGHT.✱

W8-11 "UNEVEN LANES" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF AN UNEVEN ADJACENT LANE SITUATION THAT EXCEEDS ONE INCH IN HEIGHT.✱

W9-1( ) "LEFT (RIGHT) LANE ENDS" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE PAVEMENT WIDTH TRANSITION SIGN (W4-2).

W9-2( ) "LANE ENDS/MERGE LEFT (RIGHT)" - THIS SIGN IS INTENDED FOR USE AS A SUPPLEMENT TO THE PAVEMENT WIDTH TRANSITION SIGN (W4-2).

W9-3 OR W9-3a( ) "CENTER LANE CLOSED AHEAD" - THIS SIGN SHOULD BE USED IN ADVANCE OF THE POINT WHERE WORK OCCUPIES THE CENTER LANE AND TRAFFIC IS DIRECTED TO THE RIGHT OR LEFT OF THE WORK ZONE.✱

W12-1 "DOUBLE ARROW SYMBOL" - THIS SIGN SHOULD BE PLACED AT THE POINT OF THE OBSTRUCTION IN THE ROADWAY, WHERE TRAFFIC IS PERMITTED TO PASS ON EITHER SIDE OF THE OBSTRUCTION.

W12-2 "LOW CLEARANCE SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF AN OBSTRUCTION TO WARN VEHICLE OPERATORS OF CLEARANCES LESS THAN THE MAXIMUM VEHICLE HEIGHT PERMITTED PLUS 12 INCHES.✱

W13-1P( ) "ADVISORY SPEED PLAQUE" - THIS PLAQUE IS INTENDED TO SUPPLEMENT WARNING SIGNS ONLY AND SHALL NOT BE MOUNTED ALONE. IT IS USED TO INDICATE THE MAXIMUM RECOMMENDED SPEED FOR THE INDICATED CONDITION.

W13-3 "ADVISORY RAMP SPEED" - THIS SIGN IS TO BE POSTED TO INFORM MOTORISTS WHAT THE SUGGESTED SPEED LIMIT IS ON A RAMP.

W20-1 "ROAD/WORK/AHEAD" - THIS SIGN IS TO BE LOCATED IN ADVANCE OF THE INITIAL ACTIVITY OR DETOUR A DRIVER MAY ENCOUNTER, AND IS INTENDED TO BE USED AS A WARNING OF OBSTRUCTIONS OR RESTRICTIONS.

W20-2 "DETOUR/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE POINT AT WHICH TRAFFIC IS DIVERTED OVER A TEMPORARY ROADWAY OR ROUTE.

W20-3 "ROAD/CLOSED/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT AT WHICH A ROADWAY IS CLOSED TO ALL TRAFFIC OR TO ALL BUT LOCAL TRAFFIC.

W20-4 "ONE LANE/ROAD/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT WHERE TRAFFIC IN BOTH DIRECTIONS MUST USE A SINGLE LANE.

W20-5( ) "XXX LANE/CLOSED/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT WHERE ONE LANE OF A MULTIPLE-LANE ROADWAY IS CLOSED. IT SHOULD BE PROVIDED WITH INTERCHANGEABLE PLAQUES READING "RIGHT", "LEFT", AND "CENTER" AT NO ADDITIONAL COST TO THE PROJECT.

W20-7 "FLAGGER SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF ANY POINT AT WHICH A FLAGGER HAS BEEN STATIONED TO CONTROL TRAFFIC THROUGH OR AROUND THE PROJECT.✱

W20-52 "GROOVED/PAVEMENT/AHEAD" - THIS SIGN IS INTENDED TO BE USED IN ADVANCE OF A ROADWAY THAT HAS BEEN GROOVED AND/OR ROTO MILLED.

W21-1a "WORKER SYMBOL" - THIS SIGN IS INTENDED FOR USE IN CONJUNCTION WITH MINOR MAINTENANCE AND PUBLIC UTILITY OPERATIONS FOR THE PROTECTION OF MEN WORKING IN OR NEAR THE ROADWAY.

W21-2 "FRESH/OIL" - THIS SIGN IS INTENDED FOR USE WHERE RE-SURFACING OPERATIONS HAVE RENDERED THE SURFACE OF THE PAVEMENT TEMPORARILY WET, AND OBJECTIONABLE SPLASHING ON VEHICLES MAY OCCUR.✱

W21-3 "ROAD/MACHINERY/AHEAD" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE AREAS WHERE HEAVY EQUIPMENT IS OPERATING IN OR ADJACENT TO THE ROADWAY.✱

W21-4 "ROAD/WORK/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF MAINTENANCE FOR MINOR RECONSTRUCTION OPERATIONS IN THE ROADWAY.

W21-5 "SHOULDER/WORK" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE PROJECT INVOLVING THE SHOULDER, WHERE THE TRAVELED WAY REMAINS UNOBSTRUCTED.

W21-6 "SURVEY/CREW" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT WHERE A SURVEYING CREW IS WORKING IN OR ADJACENT TO THE ROADWAY.✱

W22-1 "BLASTING/ZONE/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF ANY POINT OR WORK SITE WHERE THERE ARE EXPLOSIVES BEING USED. THE W22-2 AND W22-3 SIGNS MUST BE USED IN SEQUENCE WITH THIS SIGN.

W22-2 "TURN OFF/2-WAY RADIOS/AND/CELLULAR/PHONES" - THIS SIGN IS TO BE USED IN SEQUENCE WITH THE W22-1 AND W22-3 SIGNS AND PLACED AT LEAST 1000 FEET FROM THE BEGINNING OF THE BLASTING ZONE.

W22-3 "END/BLASTING/ZONE" - THIS SIGN IS TO BE USED TO DENOTE THE END OF THE RADIO INFLUENCE AREA AND SHALL BE PLACED A MINIMUM OF 1000 FEET FROM THE BLASTING ZONE, EITHER WITH OR PRECEDING THE END CONSTRUCTION SIGN.

W22-50(X) "ROCK SCALING X MILE(S)" - THIS SIGN IS INTENDED TO BE USED IN ADVANCE OF A FLAGGER IN ADVANCED OF THE WORK ZONE AREA.

ADVANCE PLACEMENT OF WARNING SIGNS

POSTED OR 85TH PERCENTILE SPEED	CONDITION A +	ADVANCE PLACEMENT DISTANCE (FEET) ++ CONDITION B: DECLARATION TO THE LISTED ADVISORY SPEED (MPH) FOR THE CONDITION							
		MPH							
		0	10	20	30	40	50	60	70
20	225	●	●	--	--	--	--	--	--
25	325	●	●	●	--	--	--	--	--
30	450	●	●	●	--	--	--	--	--
35	550	●	●	●	●	--	--	--	--
40	650	125	●	●	●	--	--	--	--
45	750	175	125	●	●	●	--	--	--
50	850	250	200	150	100	●	--	--	--
55	950	325	275	225	175	100	●	--	--
60	1100	400	350	300	250	175	●	--	--
65	1200	475	425	400	350	275	175	●	--
70	1250	550	525	500	425	350	250	150	--
75	1350	650	625	600	525	450	350	250	100

+ CONDITION A: SPEED REDUCTION AND LANE CHANGING IN HEAVY TRAFFIC. TYPICAL SIGNS ARE "MERGE" AND "RIGHT LANE ENDS".

++ CONDITION B: TYPICAL CONDITIONS ARE THE WARNING OF A POTENTIAL STOP SITUATION AND LOCATIONS WHERE THE ROAD USER MUST DECREASE SPEED TO MANEUVER THROUGH THE WARNED CONDITION. TYPICAL SIGNS ARE "STOP AHEAD", "SIGNAL AHEAD", "YIELD AHEAD", "CURVE", "REVERSE CURVE", "TURN".

● NO SUGGESTED DISTANCES ARE PROVIDED AT THESE SPEEDS, AS THE PLACEMENT IS DEPENDENT ON SITE CONDITIONS AND OTHER SIGNING.

A SUPPLEMENTAL PLAQUE MAY BE USED WITH WARNING SIGNS SPECIFYING THE DISTANCE TO THE CONDITION IF THERE IS AN IN-BETWEEN INTERSECTION THAT MIGHT CONFUSE THE MOTORIST.

✱ PLACEMENT SHOULD BE IN ACCORDANCE WITH WARNING SIGN PLACEMENT TABLE.

Computer File Information		
Creation Date: 07/04/12	Initials: KEN	
Last Modification Date: 12/8/14	Initials: KEN	(R-4)
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans		(R-7)
Drawing File Name: S-630-01_24of24.dgn		(R-X)
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English		(R-X)

Sheet Revisions	
Date:	Comments
07/26/13	CHANGE W20-7a SIGN CODE TO W20-7
12/8/14	FORMERLY SHEET 20.

Colorado Department of Transportation
4201 East Arkansas Avenue
Denver, Colorado 80222
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Safety & Traffic Engineering Branch KCM/KEN

TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

Issued By: Safety & Traffic Engineering Branch July 4, 2012

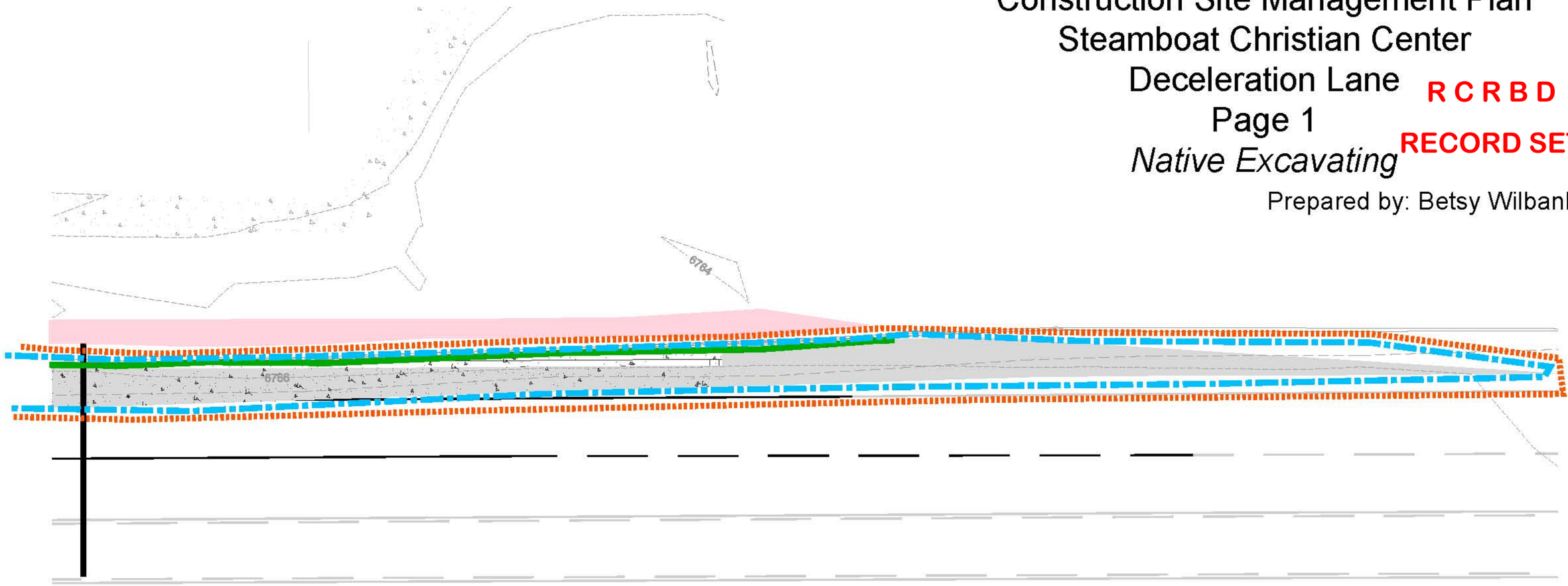
STANDARD PLAN NO.
S-630-1
Sheet No. 24 of 24

Construction Site Management Plan
Steamboat Christian Center
Deceleration Lane
Page 1
Native Excavating

R C R B D

RECORD SET

Prepared by: Betsy Wilbanks



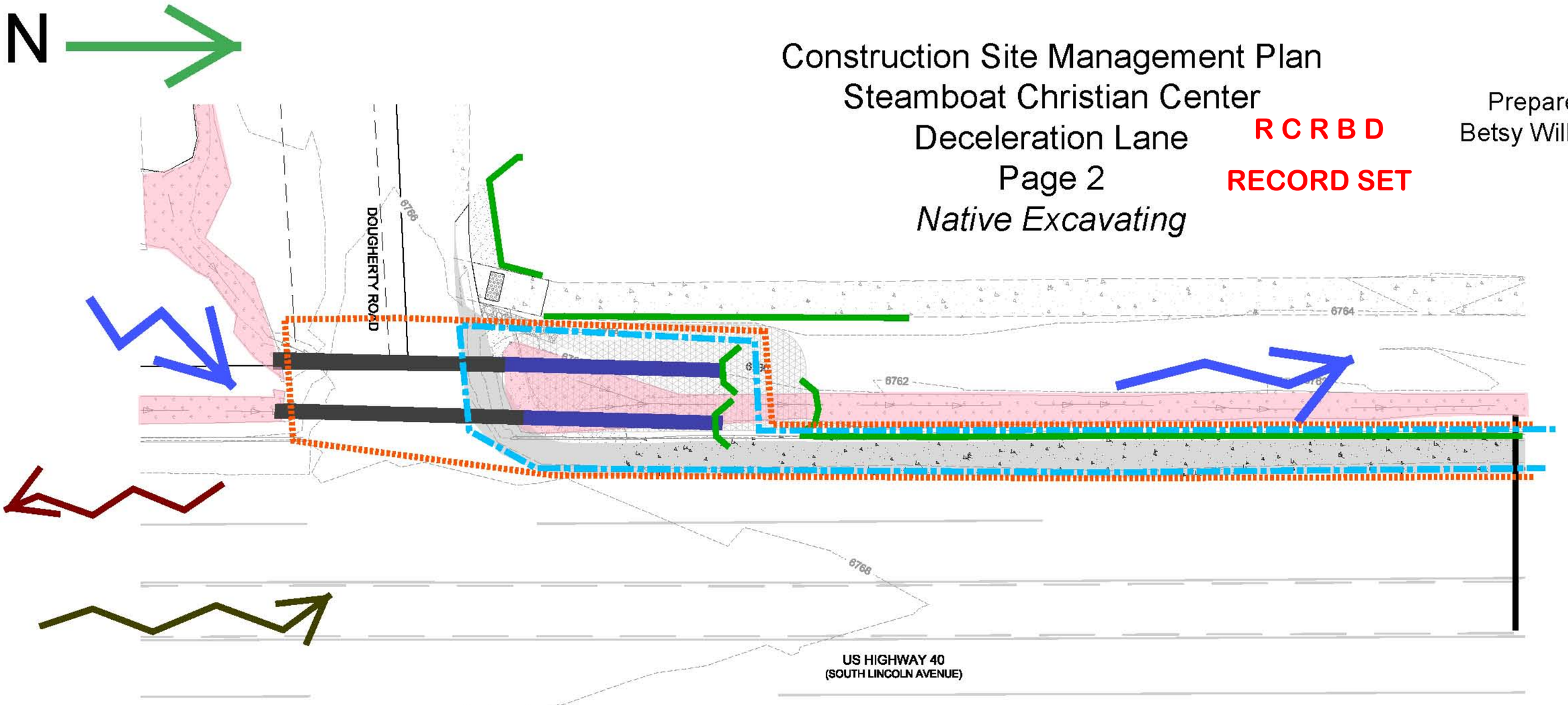
Typical Ingress
Typical Egress
Existing Culverts
New Culverts
Straw Wattles
Designated Wetlands
Direction of Overland Flow
Site Boundary
Area of Disturbance

Construction Site Management Plan
Steamboat Christian Center
Deceleration Lane
Page 2
Native Excavating

R C R B D

RECORD SET

Prepared by:
Betsy Wilbanks



Typical Ingress
Typical Egress
Existing Culverts
New Culverts
Straw Wattles
Designated Wetlands
Direction of Overland Flow
Site Boundary
Area of Disturbance

CSMP
Steamboat Christian Center Deceleration Lane
Job #192

R C R B D

RECORD SET

Standard Notes for Construction Site Management Plans:

1. This plan shall be kept on site at all times and updated to reflect any changes.
2. Concrete waste and washout water from mixing trucks shall be contained on site, removed from the site, and properly disposed of. Materials shall not enter state waters.
3. Contractor is responsible for installing and maintaining temporary erosion and sediment control during construction and establishing any required permanent Best Management Practices (BMPs) to prevent release of pollutants from the project site.
4. Contractor is responsible for complying with all local, state, and federal laws. In addition, contractor must obtain required permits.
5. Clearing or grading shall not begin until all sediment control devices have been installed.
6. The contractor shall promptly remove all sediment, mud, and construction debris that may accumulate in the right of way, private property, or waterways as a result of the construction activities.
7. All ingress, egress, and vehicle access points onto the disturbed site must be stabilized with a vehicle tracking control pad. Access shall only be via approved locations, as shown on the approved CSMP.
8. Soil stabilization measures shall be in place and/or areas are to be re-vegetated if: 1) stockpiles are inactive for more than 30 days or 2) the disturbance extends past one growing season.
9. Inlet protection shall be installed in conjunction with storm drain inlets where the drainage area is not vegetated.
10. BMPs shall be used, modified, and maintained whenever necessary to reflect current conditions. BMPs shall be inspected weekly and after every precipitation event. Accumulated sediment shall be removed from the BMPs when the sediment level reaches half of the height of the BMP.
11. Emergency access must be kept obstacle free and passable at all times.
12. Contractor shall coordinate with the City Construction Site Manager regarding special permitting for any work done in the Right of Way (ROW). No work shall be conducted in the ROW between November 1 and April 1 without prior approval from the director of Public Works.
13. Where required as part of the ROW permit or where site work affects the pedestrian or vehicle travel way, traffic control shall be installed. All traffic control shall be in accordance with the Manual on Uniform Traffic Control Devices, latest edition.
14. Sidewalks adjacent to construction shall be maintained by the contractor for public use. In areas where construction is taking place next to the sidewalk and overhead hazards are possible, contractor is responsible for installing and maintaining sidewalk protection.

Site Specific Notes:

1. The area of disturbance is marked on the site map. It will encompass the entirety of the site and is approximately 0.26 acres.
2. Employee parking will occur on-site.
3. Wattles will installed prior to the commencement of work to protect existing drainage ditches. All wattles will be the standard 9" x 25'.
4. Rock socks will be used on impervious surfaces to limit runoff from stockpiles.
5. Concrete trucks will be directed to wash out in their own yard.
    a. Should this prove to be not feasible a concrete washout area will be constructed at a location to be determined at that time.
6. Dust control will be managed via good housekeeping practices, including, but not limited to, a water truck and a street sweeper.
7. Primary ingress/egress will be at the intersection of US Highway 40 and Dougherty Road.
8. Stockpiles, dumpster, and port-a-let will all be located in the parking lot behind the Steamboat Christian Center.
9. Phasing will be as follows:
    a. Site Layout and Mobilization
        i. Potential Pollutants
            1. Equipment Maintenance and Fueling
            2. Petroleum Based Products
            3. Site Entry and Exit
        ii. BMPs (See associated BMP Fact Sheets)
            1. Good Housekeeping Practices
            2. Spill Kit
            3. Stabilized Staging Area
    b. Installation of Traffic Control
        i. Potential Pollutants
            1. Activities by Others
            2. Construction Parking
            3. Site Entry and Exit
        ii. BMPs (See associated BMP Fact Sheets)
            1. Protection of Existing Vegetation
            2. Good Housekeeping
    c. Installation of Erosion Control
        i. Potential Pollutants
            1. Construction Parking
            2. Disturbed Soil Flat
            3. Equipment Maintenance and Fueling
            4. Portable Toilet
            5. Site Entry and Exit
        ii. BMPs (See associated BMP Fact Sheets)
            1. Protection of Existing Vegetation

2. Good Housekeeping
3. Spill Kit
4. Stabilized Staging Area
5. Straw Wattle

d. Asphalt Milling
    i. Potential Pollutants
        1. Activities by Others
        2. Construction Parking
        3. Equipment Maintenance and Fueling
        4. Petroleum Based Products
        5. Portable Toilet
    ii. BMPs (See associated BMP Fact Sheets)
        1. Good Housekeeping
        2. Spill Kit
        3. Straw Wattle
e. MSE Wall Preparation
    i. Potential Pollutants
        1. Construction Parking
        2. Disturbed Soil Flat
        3. Equipment Maintenance and Fueling
        4. Petroleum Based Products
        5. Portable Toilet
        6. Stockpile
        7. Site Entry and Exit
    ii. BMPs (See associated BMP Fact Sheets)
        1. Protection of Existing Vegetation
        2. Good Housekeeping
        3. Spill Kit
        4. Stockpile Management
        5. Stabilized Staging Area
        6. Straw Wattle
f. Culvert Extension, Ditch Work, and Embankment Work
    i. Potential Pollutants
        1. Construction Parking
        2. Disturbed Soil Flat
        3. Equipment Maintenance and Fueling
        4. Petroleum Based Products
        5. Portable Toilet
        6. Stockpile
        7. Site Entry and Exit
    ii. BMPs (See associated BMP Fact Sheets)
        1. Protection of Existing Vegetation
        2. Good Housekeeping

3. Spill Kit
4. Stockpile Management
5. Stabilized Staging Area
6. Straw Wattle

g. Turn Lane Sub-Grade Preparation
    i. Potential Pollutants
        1. Construction Parking
        2. Disturbed Soil Flat
        3. Equipment Maintenance and Fueling
        4. Petroleum Based Products
        5. Portable Toilet
        6. Stockpile
        7. Site Entry and Exit
    ii. BMPs (See associated BMP Fact Sheets)
        1. Protection of Existing Vegetation
        2. Good Housekeeping
        3. Spill Kit
        4. Stockpile Management
        5. Stabilized Staging Area
        6. Straw Wattle
h. Concrete and Asphalt Application
    i. Potential Pollutants
        1. Activities by Others
        2. Construction Parking
        3. Equipment Maintenance and Fueling
        4. Petroleum Based Products
        5. Portable Toilet
        6. Site Entry and Exit
    ii. BMPs (See associated BMP Fact Sheets)
        1. Concrete Washout Area
        2. Good Housekeeping
        3. Stabilized Staging Area
        4. Straw Wattle
i. Shoulder Barrier and Guardrail Installation
    i. Potential Pollutants
        1. Activities by Others
        2. Construction Parking
        3. Equipment Maintenance and Fueling
        4. Petroleum Based Products
        5. Portable Toilet
        6. Site Entry and Exit
    ii. BMPs (See associated BMP Fact Sheets)
        1. Good Housekeeping

2. Spill Kit
3. Stabilized Staging Area
4. Straw Wattle

j. Pavement Striping and Shouldering
   i. Potential Pollutants
      1. Activities by Others
      2. Construction Parking
      3. Disturbed Soil Flat
      4. Equipment Maintenance and Fueling
      5. Portable Toilet
      6. Stockpile
      7. Site Entry and Exit
   ii. BMPs (See associated BMP Fact Sheets)
      1. Good Housekeeping
      2. Spill Kit
      3. Stockpile Management
      4. Stabilized Staging Area
      5. Straw Wattle

k. Revegetation
   i. Potential Pollutants
      1. Construction Parking
      2. Disturbed Soil Flat
      3. Equipment Maintenance and Fueling
      4. Fertilizers and Nutrients
      5. Petroleum Based Products
      6. Portable Toilet
      7. Site Entry and Exit
   ii. BMPs (See associated BMP Fact Sheets
      1. Rolled Erosion Control Products
      2. Good Housekeeping
      3. Mulching
      4. Spill Kit
      5. Temporary and Permanent Seeding
      6. Straw Wattle

10. Revegetation will be established via seeding, standard mulching, and use of a HydroMulcher. Final stabilization will be achieved when 70% of the pre-construction vegetation is reached, in a uniform coverage.
11. Betsy Wilbanks, Environmental Officer for Native Excavating, will conduct all BMP and SWMP inspections.
12. Spill kits are located in the Foreman and Superintendent's trucks.
13. See attached Traffic Control Plan for the General TCP for the job.
    a. All TCP's were generated by Janessa Kapple, TCS.

14. The site is covered under a US Army Corp of Engineers Nationwide Permit-14 (Linear Transport Projects) and will comply with the general terms and conditions. This designation is SPK-2015-00656.

CC ENTERPRISES - TRAFFIC CONTROL SPECIALISTS, INC.

Contractor: NATIVE EXCAVATING PAGE #1

Project: STEAMBOAT CHRISTIAN CENTER ACCESS & LANE IMPROVEMENTS

Method of Handling Traffic: SHOULDER CLOSURE ON THREE LANE HWY

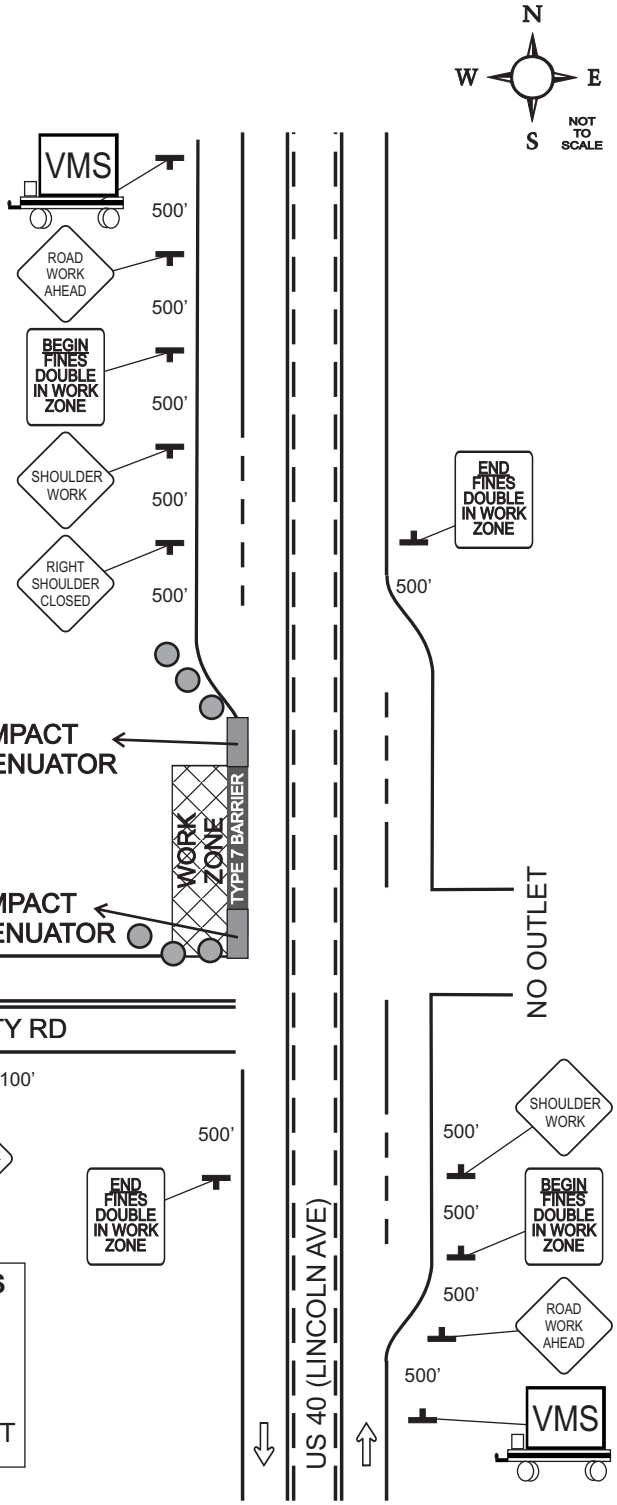
PREPARED BY:
Janessa Kapple 07/12/2017
ATSSA TCS NAME DATE
PHONE: 970-242-0669
CERTIFICATION # 245582
ISSUE DATE: 06/28/2013
EXPIRATION DATE: 06/24/2017
CERTIFICATION RENEWAL IN PROCESS
CURRENT CERTIFICATION VALID FOR 6 MONTHS

CDOT - OTIS - SPEED LIMIT					
Route	Begin Ref	End Ref	Length	Pri Speed Limit	Sec Speed Limit
040A	133.1	135.648	2.521	45	45
040A	135.648	135.753	0.101	55	45
040A	135.753	139.3	3.606	55	55

BASED ON A SPEED OF 45 MPH:
SHOULDER TAPER: 180'
DEVICE SPACING: 45'
SHOULDER BUFFER: 360'
DEVICE SPACING: 90'
SHOULDER END TAPER: 50'
DEVICE SPACING: 25'

NOTES:
1. CONTRACTOR WILL NEED THE SHOULDER CLOSED ON A TWO LANE ROAD UNTIL COMPLETION OF WORK.
2. AT NIGHT, HAZARDS WILL BE BARRICADED WITH DRUMS AND FLASHING LIGHTS.
3. REFER TO MUTCD FIGURE 6H-3 FOR A TYPICAL APPLICATION.
4. TYPE 7 BARRIER WALL AND IMPACT ATTENUATORS SHALL BE PLACED ACCORDING TO MANUFACTURERS SPECIFICATIONS.

SIGNS & DEVICES:
2 - VMS BOARDS
3 - ROAD WORK AHEAD
3 - SHOULDER WORK
1 - RIGHT SHOULDER CLOSED
2 - IMPACT ATTENUATOR
TYPE 7 BARRIER WALL
CHANNELIZING DEVICE
CHANNELIZING DEVICE WITH LIGHT



MHT KEY

- CHANNELIZING DEVICE
- WORK ZONE
- IMPACT ATTENUATOR
- TYPE 7 BARRIER

CHANNELIZING DEVICES

- USED IN TAPERS
- USED IN TANGENT

NAE17-003-01

CC ENTERPRISES - TRAFFIC CONTROL SPECIALISTS, INC.

Contractor: NATIVE EXCAVATING PAGE #2

Project: STEAMBOAT CHRISTIAN CENTER ACCESS & LANE IMPROVEMENTS

Method of Handling Traffic: LANE SHIFT ON THREE LANE HWY

PREPARED BY:
Janessa Kapple 07/12/2017
ATSSA TCS NAME DATE
PHONE: 970-242-0669
CERTIFICATION # 245582
ISSUE DATE: 06/28/2013
EXPIRATION DATE: 06/24/2017
CERTIFICATION RENEWAL IN PROCESS
CURRENT CERTIFICATION VALID FOR 6 MONTHS

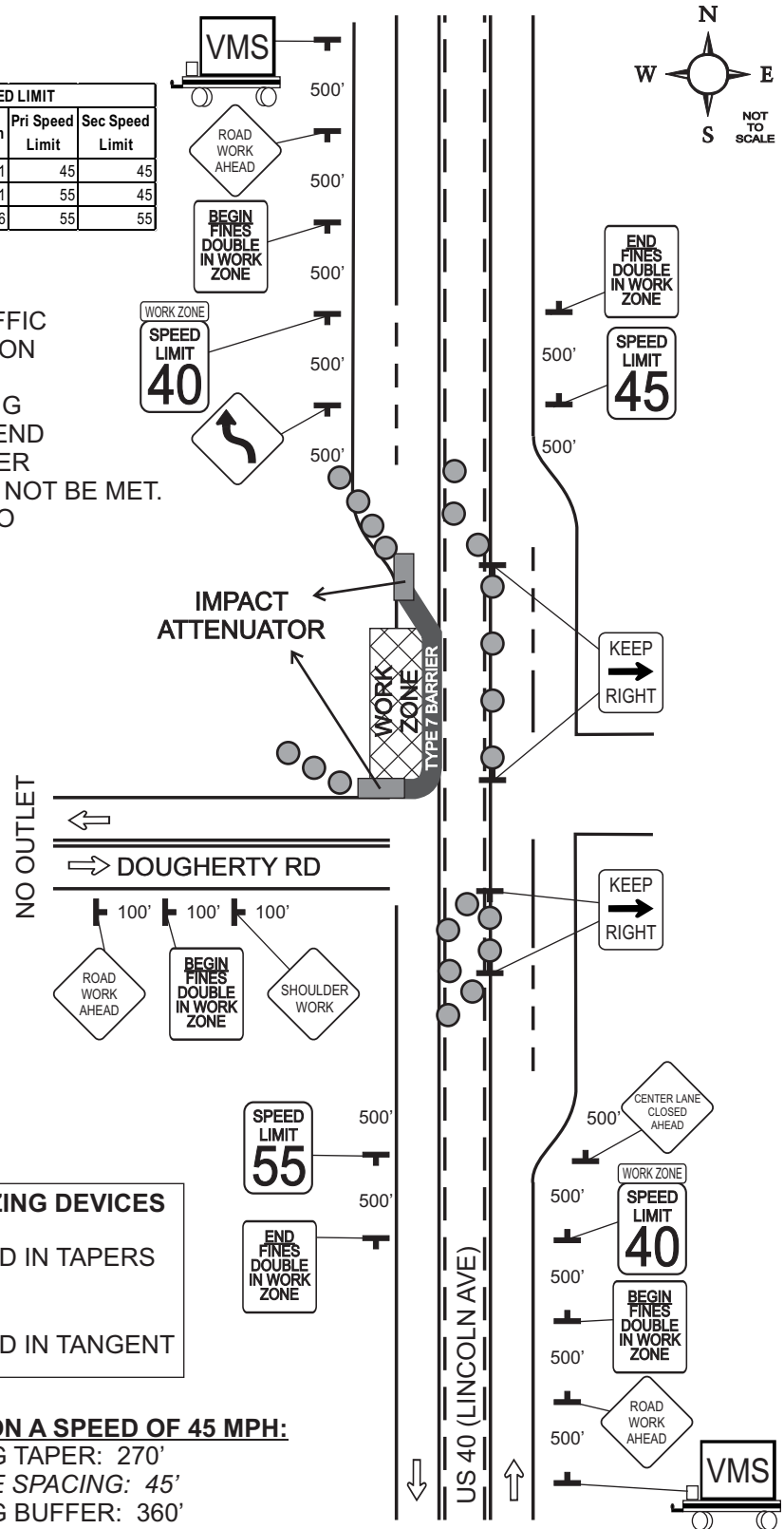
CDOT - OTIS - SPEED LIMIT					
Route	Begin Ref	End Ref	Length	Pri Speed Limit	Sec Speed Limit
040A	133.1	135.648	2.521	45	45
040A	135.648	135.753	0.101	55	45
040A	135.753	139.3	3.606	55	55

NOTES:

1. CONTRACTOR WILL NEED TO SHIFT TRAFFIC ON A THREE LANE HWY UNTIL COMPLETION OF WORK.
2. BARRIER WALL SHALL BE SET ACCORDING TO MANUFACTURERS SPECIFICATIONS. END TREATMENTS SHALL BE USED ON BARRIER ENDS IF AN ADEQUATE FLARE RATE CAN NOT BE MET.
3. REFER TO MUTCD FIGURE 6H-31 & THE CO STANDARDS S-630-1 CASE NO 24 FOR TYPICAL APPLICATIONS.

SIGNS & DEVICES:

3 - BEGIN FINES DOUBLE IN WORK ZONE
2 - END FINES DOUBLE IN WORK ZONE
3 - ROAD WORK AHEAD
2 - WORK ZONE PLAQUE
2 - SPEED LIMIT 40
1 - SPEED LIMIT 45
1 - SPEED LIMIT 55
1 - SHOULDER WORK
1 - REVERSE CURVE
1 - CENTER LANE CLOSED AHEAD
4 - KEEP RIGHT (ARROW)
2 - VARIABLE MESSAGE SIGN PANEL
CHANNELIZING DEVICE
CHANNELIZING DEVICE W/ LIGHTS
SIGN COVERS
TYPE 7 BARRIER WALL
IMPACT ATTENUATOR



MHT KEY

- CHANNELIZING DEVICE
- WORK ZONE
- IMPACT ATTENUATOR
- TYPE 7 BARRIER

CHANNELIZING DEVICES

- USED IN TAPERS
- USED IN TANGENT

BASED ON A SPEED OF 55 MPH:
SHIFTING TAPER: 330'
DEVICE SPACING: 55'
SHIFTING BUFFER: 495'
DEVICE SPACING: 110'
SHIFTING END TAPER: 50'
DEVICE SPACING: 25'

BASED ON A SPEED OF 45 MPH:
SHIFTING TAPER: 270'
DEVICE SPACING: 45'
SHIFTING BUFFER: 360'
DEVICE SPACING: 90'
SHIFTING END TAPER: 50'
DEVICE SPACING: 25'

NAE17-003-02

CC ENTERPRISES - TRAFFIC CONTROL SPECIALISTS, INC.

Contractor: NATIVE EXCAVATING

Project: STEAMBOAT CHRISTIAN CENTER ACCESS & LANE IMPROVEMENTS

Method of Handling Traffic: FLAGGING OPERATION ON THREE LANE HWY

PREPARED BY:
Janessa Kapple 07/17/2017
ATSSA TCS NAME DATE
PHONE: 970-242-0669
CERTIFICATION # 245582
ISSUE DATE: 06/28/2013
EXPIRATION DATE: 06/24/2017
CERTIFICATION RENEWAL IN PROCESS
CURRENT CERTIFICATION VALID FOR 6 MONTHS

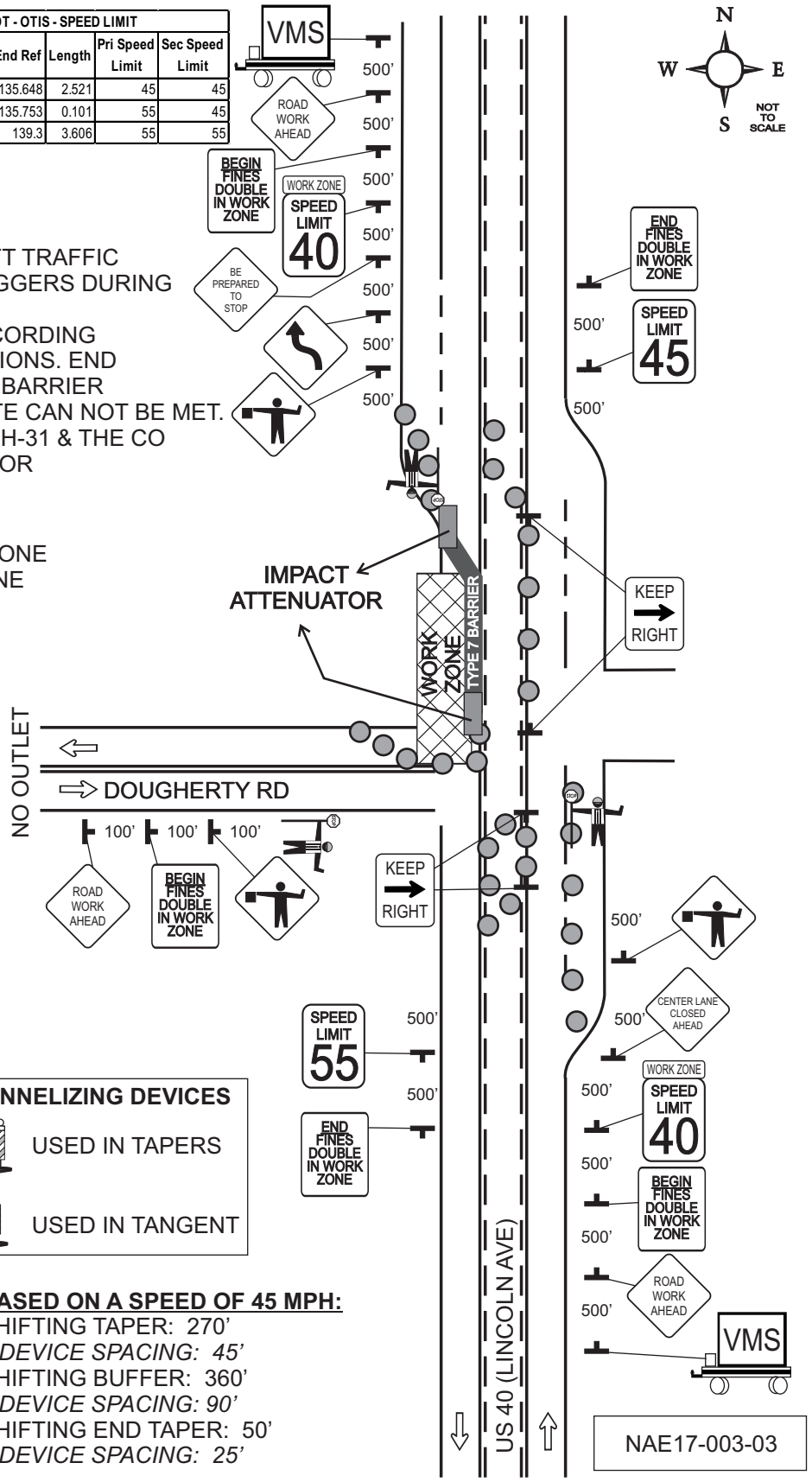
CDOT - OTIS - SPEED LIMIT					
Route	Begin Ref	End Ref	Length	Pri Speed Limit	Sec Speed Limit
040A	133.1	135.648	2.521	45	45
040A	135.648	135.753	0.101	55	45
040A	135.753	139.3	3.606	55	55

NOTES:

1. CONTRACTOR WILL NEED TO SHIFT TRAFFIC ON A THREE LANE HWY WITH FLAGGERS DURING WORKING HOURS ONLY.
2. BARRIER WALL SHALL BE SET ACCORDING TO MANUFACTURERS SPECIFICATIONS. END TREATMENTS SHALL BE USED ON BARRIER ENDS IF AN ADEQUATE FLARE RATE CAN NOT BE MET.
3. REFER TO MUTCD FIGURE 6H-10, 6H-31 & THE CO STANDARDS S-630-1 CASE NO 24 FOR TYPICAL APPLICATIONS.

SIGNS & DEVICES:

3 - BEGIN FINES DOUBLE IN WORK ZONE
2 - END FINES DOUBLE IN WORK ZONE
3 - ROAD WORK AHEAD
2 - WORK ZONE PLAQUE
2 - SPEED LIMIT 40
1 - SPEED LIMIT 45
1 - SPEED LIMIT 55
3 - FLAGGER SYMBOL
1 - REVERSE CURVE
1 - CENTER LANE CLOSED AHEAD
1 - BE PREPARED TO STOP
4 - KEEP RIGHT (ARROW)
2 - VARIABLE MESSAGE SIGN PANEL
CHANNELIZING DEVICE
CHANNELIZING DEVICE W/ LIGHTS
SIGN COVERS
TYPE 7 BARRIER WALL
IMPACT ATTENUATOR



MHT KEY

- CHANNELIZING DEVICE
- WORK ZONE
- IMPACT ATTENUATOR
- TYPE 7 BARRIER

CHANNELIZING DEVICES

- USED IN TAPERS
- USED IN TANGENT

BASED ON A SPEED OF 55 MPH:

SHIFTING TAPER: 330'
DEVICE SPACING: 55'
SHIFTING BUFFER: 495'
DEVICE SPACING: 110'
SHIFTING END TAPER: 50'
DEVICE SPACING: 25'

BASED ON A SPEED OF 45 MPH:

SHIFTING TAPER: 270'
DEVICE SPACING: 45'
SHIFTING BUFFER: 360'
DEVICE SPACING: 90'
SHIFTING END TAPER: 50'
DEVICE SPACING: 25'

NAE17-003-03

BMP Fact Sheets

Native Excavating

Steamboat Christian Center
Deceleration Lane
Job #192